NAVY CIVIL Engineer
Fall 1984

The Navy fights costly pollution on many fronts

Heightened media coverage and public attention to the issue of hazardous waste will require the Navy to make some tough decisions concerning the costly disposal of some 20 billion gallons of industrial waste generated annually.

New regulations have increased the cost of hazardous waste disposal about 2,000 times from 75 cents per 1,000 gallons in the 70s to $1.50 per single gallon in the 80s.

Research is now underway to eliminate the

Please turn to page 10

How to qualify . . .

• Students must be U.S. citizens, between the ages of 19 and 35 years, and within 12 months of graduation and enrolled in an engineering degree program accredited by the Accreditation Board for Engineering/Technology or architecture program accredited by the National Architectural Accrediting Board . . .
• and meeting current scholastic and physical standards upon acceptance into the program. They will be placed on active duty as Officer Candidate, Seaman (E-3), prior to receiving their baccalaureate degrees . . . • Upon graduation they will be required to complete Officer Candidate School, Newport, R.I., and the basic course of instruction at the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif. . . .
• Following completion of Officer Candidate school, they will be obligated to remain on active duty for four years ...
• Applicants are not limited to civil engineering, but are eligible if completing ABET accredited engineering degrees in *mechanical, electrical, ocean or petroleum construction.* Applicants enrolled in architecture must be pursuing study programs of at least five years duration in an institution accredited by the National Architectural Accrediting Board.

Contact your nearest Civil Engineer Corps Officer

LCdr. Mike Berry, CEC, USN
NAVFAC, Code 09MA1
200 Stovall Street
Alexandria, VA 22332
Phone (202) 694-3635
AV 224-3635

Lt. Bonnie Hagemeister, CEC, USN
NAVFAC, WESTDIV, Code 09B1
P.O. Box 727
San Bruno, CA 94066
Phone (415) 877-7491
AV 859-7491

Lt. (jg) Scott Weikert, CEC, USN
NAVFAC, NORTHDIV, Code 09R
Philadelphia, PA 19112
Phone (215) 897-6488
AV 443-6488

LCdr. Charles Gorum, CEC, USN
Naval School, Civil
Engineer Corps Officers
Port Hueneme, CA 93043
Phone (805) 982-5655
AV 360-5655

Lt. David J. Stewart, CEC, USN
NAVFAC, SOUTHDIV, Code 09F
P.O. Box 10068
Charleston, SC 29411
Phone (803) 743-3014
AV 794-3014

Lt. Steven Iselin, CEC, USN
Public Works Center
Building 1A
Great Lakes, IL 60088
Phone (312) 688-2324
AV 792-2324

Lt. Elizabeth Clarkson, CEC, USN
NAVFAC, PACDIV
Pearl Harbor, HI 96860
Phone (808) 471-8471
AV 315-8471

LOOKING AHEAD TO A BRIGHT FUTURE?

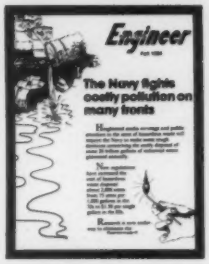
Why not consider the Navy's

Civil Engineer Corps

where qualified engineering students may earn more than

$1,000 per month prior to graduation

For details call Navy Recruiting Command **800 327-NAVY**



THE COVER

The mishandling of hazardous waste is costing our government millions of dollars every year. The Navy Civil Engineer Laboratory at Port Hueneme, Calif., is doing something to eliminate some of these high costs. Please see page 10. Navy artist Joy Ardalan designed the cover for this issue.

NAVY CIVIL Engineer

FALL ISSUE 1984 VOL XXIV, NO. 3

FEATURES

FEAT: An important Navy tool for managing and meeting objectives 2
By Ann M. Stephenson
The author describes a FEAT visit.

The software exchange wants your program 4
Share your software know-how.

Soil treatment and disposal at Pearl Harbor saves Navy big bucks 6
By Vernon K. Yamamoto
Chromic acid spill uncovered in Hawaii.

The Navy looks for new ways to cut the high cost of hazardous waste 10
By Jerry Thomas
Research at NCEL saves untold government dollars.

Point Paper: A powerful and effective tool 13
By Cdr. W. R. Mitchum
The author demonstrates how to write a point paper

Corrosion. Solving the mystery of cathodic protection 14
By Fred S. Nakamura
CP protects against corrosion in metallic structures.

General news update 17

Page 17

Page 22

Page 28

The "Bear" facts about Emergency Mission Readiness 18
By Lt. Brian R. Kelm
Kennel Bear exercises reinforce emergency Seabee mobilization.

The Atlantic Alliance — the Infrastructure Story 22
By Cdr. Bruce B. Geibel
CEC officer describes duty in Europe.

Reserve Seabees. How they think and what they do 28
By Russ Anderson
Reservists combine civilian occupations with part-time naval career.

One approach to management simplification 31
By M.C. Koblos
The author suggests steps to uncomplicate the management process.

DEPARTMENTS

speaking from topside 5
news worth reviewing 9
reader's comments/ questions 12
situation report 21
an editorial 27
39 graduate from basic at CECOS 29
advice of counsel 32

JOHN PAUL JONES, JR.
Rear Admiral, CEC, USN
Commander
and
Chief of Civil Engineers
FREDERICK G. KELLEY
Commodore, CEC, USN
Vice Commander
and
Deputy Chief of Civil Engineers

Published Quarterly By Naval Facilities Engineering Command Alexandria, VA 22332

The Navy Civil Engineer (ISSN 0098-0419) is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20401. Price: $3.25 per domestic copy, $4.06 per foreign copy. Annual subscription rates: $12.00 for domestic subscribers; $15.00 for foreign subscribers. Send remittance only to the Superintendent of Documents. Application pending for entry as a controlled circulation publication at Orange, Calif.

POSTMASTER

Send address changes to Publication office:
The Navy Civil Engineer, Code C20M, Naval School, Civil Engineer Corps Officers, Port Hueneme, CA 93043. Tel: (805) 982-3104; Govt. Autovon 360-3104; Federal Telecommunications System (FTS) 799-3104.

Issuance of *The Navy Civil Engineer* (NAVFAC P-330) is approved in accordance with Department of the Navy Publication and Printing Regulations NAVEXOS P-35. It does not alter, amend or supersede official regulations, orders or directives. Cost of printing is charged to appropriate funds for maintenance and operations of the Naval Facilities Engineering Command.

The Navy Civil Engineer is intended for the information of regular and reserve personnel of the Civil Engineer Corps, United States Navy, and key civilian employees of the Naval Facilities Engineering Command, subordinate commands and other mission-oriented activities.

LES HELSDON
Editor
KATIE BENDER
Associate Editor
GAYLA LUTMAN
Administration
JOY ARDALAN
Artist
APRIL SAIPALE
Distribution

FEAT: An important Navy tool for managing and meeting objectives

BY ANN M. STEPHENSON
P.E., Va.
Industrial Engineer
LANTNAVFACENGCOM

Public works departments are continuously competing for a bigger slice of the maintenance of real property resources pie. Merely showing a growing backlog or improved annual inspection summary does not guarantee increased funding. To obtain sufficient resources to significantly reduce the total backlog may be an impossible task; therefore, managers are looking to reduce the nondeferrable maintenance and repair (NMAR) backlog in mission essential areas.

Congress is concerned that the Navy demonstrates effective management of these resources in achieving its goals and mission. What does this mean to public works managers? To compete for scarce resources, activity level managers must convince the operational chain of command that resources are being planned and managed for effective utilization.

This includes using the continuous inspection system, engineered performance standards, plans to accomplish the non-deferrable work from the annual inspection summary, and other key elements of the maintenance management system. Also, throughout the chain of command, a system is required for assessing the public works function in order to make management decisions regarding allocating resources to gain the most impact.

The OPNAVINST 11000.16, Command Responsibility for Shore Activity Land and Facilities, provides specific guidance and establishes positive goals on how NAVFACENGCOM, major claimants, sub claimants and the activity commanding officers and public works officers will carry out facilities programs to increase productivity and provide better utilization of scarce resources.

One of the taskings of the major claimants is to conduct continuing review of land and facility maintenance practices at subordinate shore activities through the Facility Evaluation and Assistance Team (FEAT) visit. FEAT visits are to be conducted to assist the chain of command in managing its resources and will also establish an activity/sub claimant/major claimant rapport to facilitate meeting Navy objectives.

A FEAT visit should appraise effectiveness and efficiency of public works functions, facility condition, resource support, and special projects programs as well as provide assistance to the activity in the management of these functions. The FEAT is the primary tool for making essential information available to the major claimant and sub claimant to carry out their facilities management responsibilities.

The FEAT visit provides an opportunity for the activity to directly communicate to the sub claimant and major claimant, through on-site validation, its needs for resources and assistance and learn how to manage resources to achieve the major claimant's and sub claimant's goals. The FEAT visit will be the axis of the major claimants' and sub claimants' efforts to provide their activities the guidance and assistance necessary to accomplish both the major claimants' and the Navy's goals (Figure 1).

BACKGROUND

During the period from 1968-1974, declining resources and various problems in facilities management hindered efforts to improve the condition of the Navy's real property. CINCLANTFLT concluded that there did not exist an adequate method for equitably distributing resources and felt a real need to develop a system to improve their management of resources. Management required information that could only be obtained from a comprehensive assessment of the:

- Condition of facilities
- Adequacy of resources
- Status of management systems and programs

This assessment needed to be applied at each activity on a uniform basis so that decisions could be made regarding funding. At the same time, activity managers were expressing concern that the major claimant and sub claimant did not fully appreciate their unique problems. LANTNAVFACENGCOM, in its role as shore facilities advisor to CINCLANTFLT, developed the FEAT concept as the solution to gathering the necessary management information on a consistent and uniform basis.

The on-site visit was determined to be the best way to gather the data accurately, evaluate and assist the activity and improve communication of objectives. The data required was defined and a systematic set of procedures to follow outlined (Figure 2).

FEAT visits were initiated under the direct sponsorship of CINCLANTFLT and subsequently endorsed by CINCUSNAVEUR. This program has been proven successful to CINCLANTFLT and CINCUSNAVEUR. Improvements in facilities management have been noted at most activities.

The FEAT concept has been presented with favorable response to several congressional and DOD representatives. The FEAT concept has been formally endorsed by NAVFACENGCOM and CNO with resources allocated for Navy-wide implementation.

NAVFACENGCOM supports the FEAT program by providing local Engineering Field Division support as part of their role to provide support to major claimants. This has provided the impetus needed to enable adoption by many other major claimants.

OBJECTIVES

There are six major objectives of the FEAT:

- Assess facility condition
- Evaluate resource requirements
- Review the status of facilities management programs
- Investigate items of special interest at the request of the activity, sub claimant, and major claimant
- Provide on-site assistance to the activity when feasible or provide recommendations for obtaining the required help
- Provide advice in resources management to the activity, the sub claimant and the major claimant

PROCEDURES

The FEAT is generally a four- to five-member team composed of industrial, maintenance, and utility engineers and housing and transportation management personnel from the local NAVFACENGCOM engineering field divisions. This team conducts a two-week, on-site visit at activities to assist the public work department in the following areas:

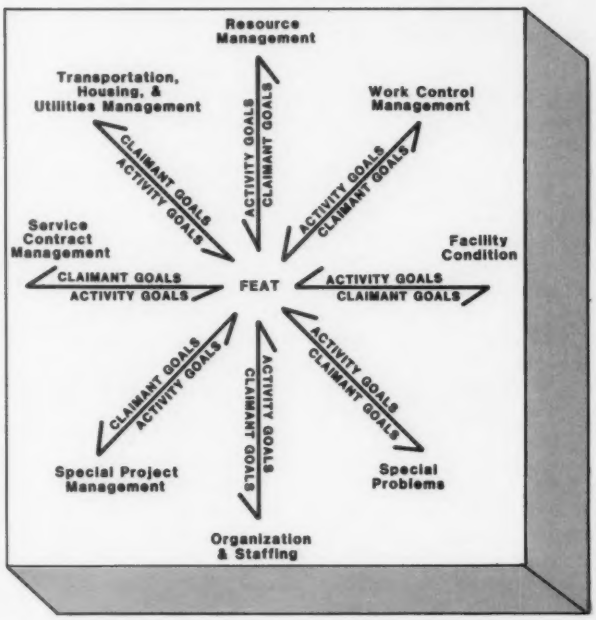


Figure 1. Major Claimant/sub claimant/activity communications.

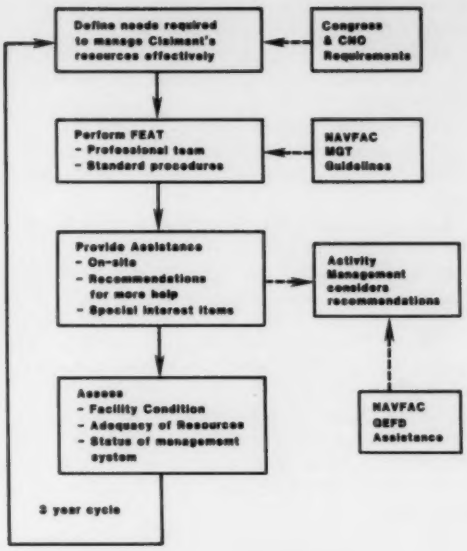


Figure 2. The FEAT model.

Facility condition assessment
Resources and budgeting
Organization and staffing
Facility inspection and annual inspection summary
Special projects
Service contracts
Work control
Utilities
Housing
Transportation

Initial and exit briefings are held with public works management personnel. Briefings are also held with the commanding officer and sub claimant staff. The initial briefing informs the activity of what subject areas the team will be looking into. The exit briefing informs the activity of the results of the visit. A final report of findings and recommendations is prepared on-site and copies are provided to activity managers at the exit briefing.

The formal report format usually includes the following:

- List of key personnel contacted
- Synopsis
- Findings and comments
- Special interest items
- Attachments

BENEFITS

The benefits of the FEAT visit include:

- Major claimant staff personnel have a method to gather data to manage resources effectively.

- Major claimant staff personnel, responsible for resource distribution, gain insight into unique activity resource problems.
- The sub claimant and major claimant staff personnel are made aware of facility management concerns at the activity level.
- On-site validation of special projects.
- An opportunity for activity management to directly interface with working level personnel of the major claimant staff.
- An opportunity for the activity to surface and discuss specific problems requiring investigation.
- An opportunity for feedback on actions taken. The FEATs are performed on a three year cycle.

The activity, sub claimant and major claimant have much to gain from a FEAT visit since it provides an opportunity every three years to establish a one-on-one understanding about such matters as how to prepare and strengthen budget justifications, AIS's and special projects, how to resolve unique funding and resource problems that are plaguing the activity, and how to improve overall facilities management techniques.

Also, the FEAT visit provides the activities the media for exchanging good ideas in facilities management during the turbulent years ahead due to changes that will come about from computerization and contracting out.

SUMMARY

The FEAT is an effective management tool. The benefit of the FEAT to the major claimant and sub claimant is that it provides a comprehensive assessment of the public works function at an activity to evaluate the condition of facilities, adequacy of resources and status of management systems and programs.

The benefit to the activity is the value of on-site assistance and the opportunity to directly communicate with major claimant personnel. The cost to the major claimant to conduct the FEAT is usually made up by the verification of special projects; however, the investment is well worth the management information obtained.

As managers throughout the chain of command strive to improve productivity and management of resources, the management information gathered through the FEAT will become even more important. All managers should embrace the FEAT concept and use it to their best advantage to achieve their goals and objectives. □

The Software Exchange wants YOUR program!

BACKGROUND

The Naval Facilities Engineering Command (NAVFAC) has a policy of encouraging the acquisition and proper use of small computers. The goal is to increase individual productivity by "providing a resource leverage to help counteract growing workload" against constant or decreasing personnel resources. In order to realize this goal, the authority to purchase small computers was delegated to the local commanding officers.

In addition, the NAVFAC End Users' Software Exchange (NEUSE) (NAVFACINST 5234.1) was established. The purpose of the exchange was not to review or critique software nor to provide advice or training to new end users, but simply to provide a means for end users to exchange applications, information and programs.

The NEUSE publishes a quarterly Software Availability Report. The latest report was published in June 1984 and it consists of over 200 pages of information describing applications, the type of operating system/software required, type of hardware required and points of contact. The Availability Report is cross-indexed by functional areas, software and hardware. It is distributed to over 400 Navy activities; it is also distributed by special request to almost a dozen non-Navy DoD activities.

THE POINT

NAVFAC's efforts to place small computers in the work place coupled with new contracts between the Navy, Air Force, and with the Zenith Corporation have been very successful in placing small computer systems into the Navy work place.

It is incumbent on new users to optimize constrained personnel resources while developing applications for their systems. The NAVFAC End User Software Exchange Program provides the ideal environment to save time and money by exchanging applications and programs which have already been developed.

CONCLUSION

The success of the program is dependent upon your participation. If you have developed a program or if you have developed an application using a commercial software package, such as DBase II, DYL-280 or LOTUS 1-2-3, then submit a NAVFAC End User Software Availability Report to Marge McComas, FACSO-Code 18B4, Port Hueneme, Calif. 93043-5000. Telephone: Autovon 360-3341, Ext. 302, or Commercial (805) 982-3341, Ext. 302.

Save the Navy some money, share your accomplishments!

speaking from topside

departments

Our Navy today is a better Navy than the Navy I was in 15 years ago. In 1969, the Navy was larger in numbers of ships, aircraft and people than our Navy today. In 1969 the Navy was using some of its weapon systems intensively and certain of those systems were at peak performance and operating at or near their design capability. But in 1969 the Navy was on its way downhill.

Ships and weapon systems were for the most part old and obsolete. Within five year, the Navy had been cut in half, personnel problems abounded, and drastic measures had to be taken to retain as much warfighting capability as possible, while a rebuilding program took hold. New weapon systems including ships, aircraft, armaments and people skills were designed and are being bought.

In the ensuing nine years, battle forces ships have increased by 67 (about 18%) and the growth in capability is even grader and deployable aircraft have similarly increased in number and capability. Operating and support budgets have been raised to more nearly meet the needs of the operating forces and the shore establishment.

The people in today's Navy are, for the most part, solid citizens who have what it takes to keep their weapon systems going at top performing capability.

Our Navy is on the move -up and to the right!

While this positive movement has been and is going on in the Navy warfighting milieu facilities and support functions, particularly as provided by the Civil Engineer Corps and our organizational elements, have been very strongly influenced by several inhibiting factors. This is true across virtually all our sphere of influence, but the most severely affected business area is in our most critical direct support function — public works.

As the Navy started downhill some 15 years ago, so did public works. First to go were some 150 military billets in public works related functions. Some of the reduction was accompanied with elimination of bases and reduction of requirement, but a substantial number came out of hide. There followed a steady dissolution of public works management related support elements consisting primarily of civilian personnel.

These reductions in capability were accompanied by a steady increase in diversionary and detracting efforts to cope with other national issues, the most prominent of which was pollution abatement and control. That pollution abatement and control was important is not at issue here, but the program did divert already inadequate resources from public works and further detracted the attention of senior policy managers from the staying power of our ability to provide public works services.

Currently, we are in an era of concentrated effort to contract out the majority of our activities. This is proving to be particularly difficult because over the past dozen years we have lost most of our ability to provide adequate public works support let alone describe the functions in sufficient detail to enable a contractor and the Navy to have an equal understanding of the job to be done by contract.

Finally, we are in a contracting environment that is hostile to sensible achievement of satisfactory services. An environment characterized by small business considerations, non-engineering functional assignments, and even contract development and oversight staff

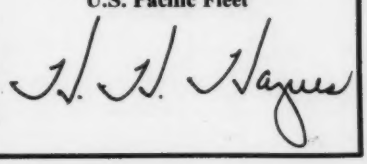
who have never had any hands-on experience in providing the public works product.

I anticipate that the next five years will be more of the same. We have coped, barely in my view, by adaptions of past procedures and policies to the point where their relevance to today's Navy is sorely stretched. Are they elastic enough to let us go up and to the right with the Navy?

I am not an advocate of a Naval Facilities Engineering Command/Civil Engineer Corps wide long-range study. I do propose that the time is near when we should look at how we should be providing public works service to the Navy, expecting a continuation of today's influences.

RAdm. Howard H. Haynes,

Commander, Pacific Division, NAVFAC
Commander, Naval Construction Battalions U.S. Pacific Fleet



Soil treatment and disposal at Pearl Harbor saves Navy $$$

By VERNON K. YAMAMOTO
P.E., Hawaii
PACDIV

Foundation excavation for a new pipe shop in July, 1981, at the Pearl Harbor Naval Shipyard uncovered a chromic acid spill where an electroplating shop was once located. The soil treatment method used to dispose of the chromium is described.

Extraction procedure toxicity tests indicated that the soil was contaminated with chromium greater than 5.0 ppm, and the groundwater had high levels of chromium. Waste is classified as hazardous by Environmental Protection Agency (EPA) regulations Table I 40 CFR 261 when the chromium concentration is above 5.0 ppm. The spill was reported to EPA Region IX in accordance with the Comprehensive Environmental Response Compensation and Liability Act.

Excavation for the foundation of the new pipe shop was halted July 24 of that year. Because of the cost of delaying construction of the new pipe shop, it was decided that the contaminated soil should be excavated and stored in a nearby building. An interim permit was obtained from the EPA for storage of the contaminated soil in this building.

Two sets of borings were completed to determine the limits of contamination in the soil. Samples were taken at six different levels for each boring. The contaminated soil was then excavated and approximately 60,000 cubic feet of contaminated soil was stored. The contaminated groundwater was left undistrubed.

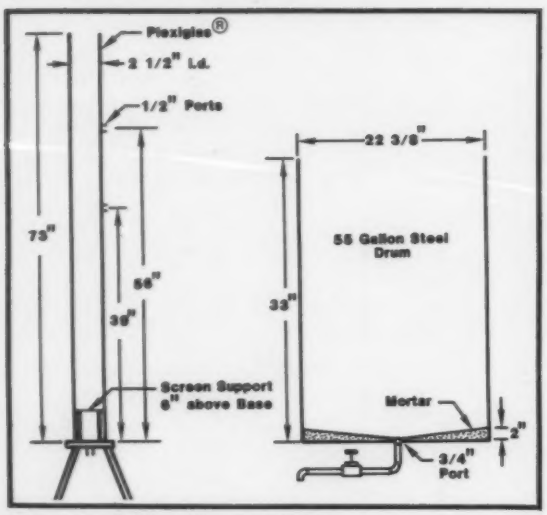


Figure 1. Soil leaching containers.

Contaminated soil classified as a hazardous waste must either be decontaminated or disposed of in a Class I landfill. Besides the contaminated soil, there remained the underlying groundwater which was also contaminated with high levels of chromium. Because it was felt that the contaminated groundwater was not posing a problem to the water supplies, the harbor waters, or the environment, a request to the EPA was made to leave the contaminated groundwater in place. The EPA approved the Navy's request to leave the groundwater in place and a monitoring program was initiated.

Contaminated soil disposal alternatives were considered. One method of contaminated soil disposal was to drum the soil in 55 gallon containers and ship these containers to a Class I landfill in the continental United States. (There are no Class I landfills in Hawaii.) The cost was estimated to be over a million dollars.

Another possible alternative considered was to leach out the chromium from the soil and then treat the leachate. This leachate treatment method could also be used to treat the contaminated groundwater.

The high cost of the former alternative made the leaching disposal method a more attractive disposal option, and a series of laboratory tests were conducted by Pacific Naval Facilities Engineering Command personnel to determine the leachability of the chromium. The variables tested included type of liquid medium, amount of liquid medium, and contact time.

The results of these laboratory tests indicated that the chromium levels in the soil could be readily reduced to an acceptable level of 5.0 mg/1 of total chromium. Tests indicated that the time of contact between the soil and water was as critical as the amount of water added. Two washings with tap water at a contact time of 35 minutes and a soil to water ratio of one to four (by weight) were effective in reducing the chromium levels.

It was then decided that a pilot plant study should be conducted to determine criteria and parameters for a full-scale treatment plant. The Water Resources Research Center (WRRC) of the University of Hawaii was hired to do the pilot plant study.

The general objective of the WRRC study was threefold. The study developed methodology for removal of chromium from the soil to an acceptable level and for removal of the chromium from the leachate and groundwater. Also studied was methodology to dewater and dispose of the treatment plant sludge in an environmentally acceptable manner.

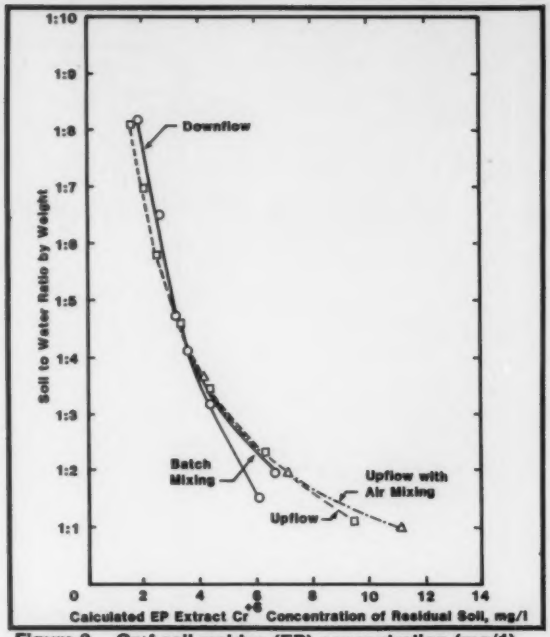


Figure 2. Cr^{+6} soil residue (EP) concentration (mg/1) vs. weighted soil to water ratio.

The basic soil leaching unit used for the laboratory bench tests was a 2.5 inch diameter, six feet deep plexiglass column as shown in Figure 1. Both the soil leaching and chromium removal from the leachate were carried out by using 55 gallon drums modified as shown in Figure 1.

Four basic methods of soil leaching were tested in the laboratory soil column: downflow, continuous upflow, continuous downflow with air, and batch mixing. From the results of these tests, it became apparent as shown (see Figure 2) that the effectiveness of leaching was mainly dependent on the soil to water ratio and essentially independent of the particular method used.

The duration of contact time between the water and the soil could make a slight difference in the amount of chromium going into solution, but under the hydraulic detention times and laboratory methods encountered, the results of the four methods as shown in Figure 2 fit a fairly tight narrow band around the 3.5 to 4.0 mg/1 Cr^{+6}) EP range in the treated soil.

After the chromium was leached from the soil, it was in the hexavalent form (Cr^{+6}) and had to be reduced to trivalent (Cr^{+3}) for the chromium to be removed from the solution. The reaction time for 99 percent conversion of Cr^{+6} to Cr^{+3} using sodium metabisulfite ($Na_2S_2O_5$) or sulfur dioxide (SO_2) is related to the pH of the solution as shown in the table.

The time difference between five minutes at pH 2.0 and 30 minutes at pH 3.0 was notable and probably within the practical application time range for a full-scale operation. A lower pH level was significant, since an increase in pH required less sulfuric acid (H_2SO_4) and subsequent less lime to raise the pH to 8.5. However, Table 1 shows that the reaction time significantly increased at a higher pH.

The most effective method, according to a literature survey, of removing chromium from water was to reduce

TIME (min)	pH
0.1	1.0
0.5	1.5
5.0	2.0
30.0	3.0
60.0	4.0
200.0	5.0

**Values obtained from Eckenfelder (1966, p. 121, Table 8-1).*

Table (Reaction Time)

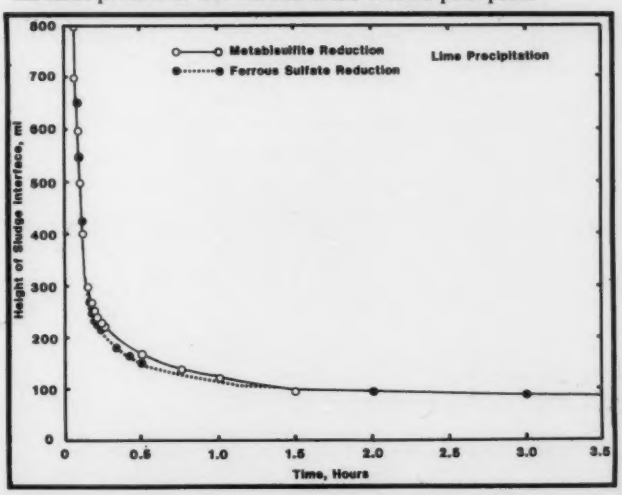
the Cr^{+6} to the Cr^{+3} and then precipitate with lime. The three common reducing agents were ferrous sulfate ($FeSO_4$), $Na_2S_2O_5$, and SO_2. Only $FeSO_4$ sulfate and sodium metabisulfite were considered for this study because of time constraints and their ease in handling as compared to SO_2.

Once the Cr^{+6} was chemically reduced to the Cr^{+3} form, the chromium could be removed through precipitation by means of raising the pH to 8.5 with the addition of lime. The rate of sludge settling for the sodium metabisulfite and ferrous sulfate chemical reduction methods are presented in Figure 3. As shown in Figure 3, the sludge for both reduction methods exhibited similar settling characteristics.

Dewatering of the resultant sludge showed that after overnight settling, the sludge had a solid content of 0.78 percent. After three days settling sludge solid content was 1.65 percent, and after centrifugation of the three-day settled sludge 3.7 percent. After three days of settling, the resulting sludge (1.65 percent solids) would be about 6 percent of its original soil volume.

A service contract was prepared for the disposal of the chromium contaminated soil. The intent of the service contract was the complete removal of the contaminated soil by November 1, 1982. No method of disposal was recommended, however, the report prepared by WRRC was included to indicate a method that was acceptable for the treatment and disposal of the contaminated soil. A permit for a treatment facility was obtained from EPA. The successful low bidder for the service contract proposed a method of treatment similar to the study done by WRRC, and the contract was awarded for $175,000.

The treatment proposed by the contractor was basically the same process as was utilized in the WRRC pilot plant



study except that the soil leaching process required the soil/rock mixture to pass through small diameter pipes and to be kept in suspension for washing. This required crushing of the soil/rock mixture. After initially trying to treat the soil as proposed, the contractor abandoned his method as it proved to be time consuming and costly. Modified dumpsters (using the upflow/downflow washing principle) were used instead.

The schematic of the modified soil leaching process is shown in Figure 4. The soil was loaded into a modified self-tipping container with an approximate capacity of two cubic yards. The container was modified to include a waterline to the bottom of the container. Water was infiltrated from the bottom of the container and drained out using the same infiltration gallery that was protected by welded steel to prevent any damage that might be caused by heavy rocks.

Water was added from the bottom until the soil was completely covered, and enough contact time was allowed before the water was drained. The number of washings per container was determined by color comparison of the drained out washwater against a standard. Color comparison could approximate the amount of chromium left in the soil. It was noted that only two or three washings were required for soil with low chromium concentration. Ten to twelve washings were required for soil with high levels of chromium.

After washing, the soil was placed in a holding area to be tested as nonhazardous.

A problem of inadequate space for the treated soil awaiting approval for disposal was initially encountered. Therefore, areas of untreated soil that showed low levels of chromium were treated first in order to make more space available.

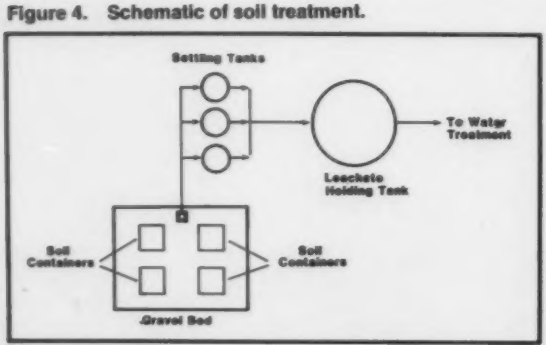
Approximately 40-50 cubic yards of soil were treated per day with a high of about 80 cubic yards. A little over 1,200 container loads were treated and sampled.

Large items in the soil such as pieces of coral, concrete and rocks were cleaned by removing the soil attached to these items before washing in the containers.

Container loads of soil with samples containing more than 5.0 mg/l chromium were re-treated until samples showed that the level of chromium met the nonhazardous criteria. The clean soil was then transported to the Barbers Point landfill for final disposal.

The washwater (leachate) was allowed to drain through a bed of gravel and into a sump. The leachate was then pumped into a settling tank to allow coarse settling before emptying into a holding tank. The leachate was then pumped into the water treatment portion of the treatment facility.

Figure 4. Schematic of soil treatment.



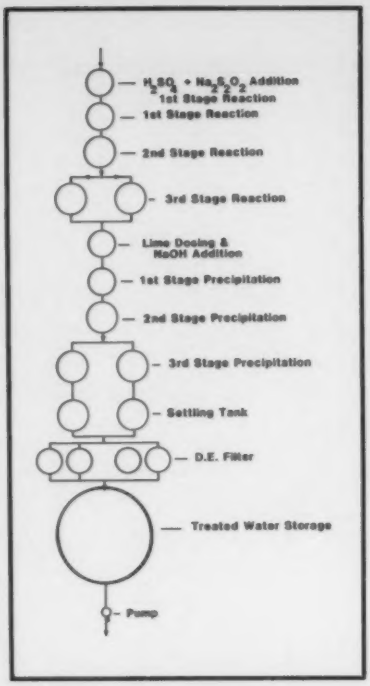


Figure 5. Schematic for leachate treatment.

The process used by the contractor to remove the chromium from the leachate was similar to the process that was used in the WRRC study. One minor deviation was the use of sodium hydroxide (NaOH) to raise the pH prior to adding lime. NaOH was utilized rather than relying entirely on lime in order to decrease the quantity of lime-based sludge. The schematic of the treatment process for chromium removal from the leachate is shown in Figure 5. The process essentially consisted of reducing the pH of the leachate to about 2.5, adding sodium metabisulfite to reduce Cr^{+6} to Cr^{+3}, and raising the pH to 8.5 to precipitate the chromium from the solution.

The resultant sludge was dewatered by the use of drying beds. Twenty 55 gallon drums of contaminated sludge were finally shipped to a Class I landfill in the States.

After the chromium was removed from the leachate, the clean water was reused in the washing of the chromium contaminated soil. When it became necessary to discharge any treated leachate to the sanitary sewer system, the water was sampled by the WRRC before it was discharged. Only treated leachate with chromium levels of 2.5 (total chromium) or 0.25 (hexavalent chromium) ppm or less could be discharged into the sanitary sewer system.

The contractor completed the cleanup of the chromium contaminated soil by December 30, 1982.

The treatment of the 60,000 cubic feet of chromium contaminated soil resulted in considerable savings to the Navy. It was estimated that drumming the contaminated soil and disposing it in a Class I landfill on the continental U.S. would have cost over a million dollars. The final soil treatment cost was $248,000.

An added benfit of soil treatment as opposed to drumming and shipping treatment was the reduction in the total number of contaminated drums.

news worth reviewing

departments

Sea Cadets visit Gulfport

Sixteen teenage members of the U.S. Naval Sea Cadet Corps (NSCC), from across the nation, recently visited the Naval Construction Battalion Center, Gulfport, Miss., for two weeks of advanced Seabee indoctrination training.

According to Deputy Director Capt. David B. Young, Jr., USN (Ret) of the NSCC, there are about 8500 cadets in the nation. Of those, about 500 are officers. Young said, "About 70 percent of age-eligible cadets enlist in the military. That's an annual total of about 1000 men."

He added, "From the Corps, the Navy is getting quality, young people who don't have alcohol or drug problems even though they are not required to enlist. Two to three percent of the Naval Academy students are former Sea Cadets.

"Upon completion of certain requirements, they are also eligible to enlist at higher paygrades. Many are promoted again after completion of advanced military schools before reporting to their first duty assignment."

Their first week of adventure was provided by NCTC, a tenant command aboard the Center who taught basic classes in the seven Seabee construction ratings and Disaster Recovery/First Aid. During their second week, the 20th NCR, also a tenant command of the Center, taught basic military training.

The cadets faced a big challenge with military training. Under the instruction of a Marine gunnery sergeant all 16 men learned the orders and basic maneuvers for marching and inspection preparation. Within two days, they were moving in unison.

In camouflage, Cadet Michael E. Taylor of Grand Blanc, Mich., was ready to demonstrate his technique to hide from enemy troops.

From marching (drill and ceremony), the cadets moved into the classroom to spend an entire afternoon learning military communications terminology and how to use the telephone and field radios.

The classroom-trained students then took their information into the field for bivouac (camping). To some, this was the most important part of the entire summer training.

1,000 Seabees return to Davisville

As CNO Adm. James D. Watkins addressed the 134th U.S. Naval Academy graduating class at Annapolis, Md., recently, the Reserve Seabees were graduating their first classes in a long time at Davisville, R.I.

The Davisville Seabee Center is the cradle of the Navy's Construction Force, born, as their founder said, "out of dire need," at the beginning of WWII.

The Center went into a semi-moth-ball state at the close of Vietnam. Used primarily now by the Reserve Seabees for training, the Center is home for the new RNCF training regiment — 21st RNCR, commanded by Capt. Fred Anibal.

Of the nearly 1,000 Seabees on active duty during the period, more than 300 students attended and completed the courses.

As the men and women from the seven units, 21st RNCR, 6th RNCR, RNMCBs 20 and 26, CBHU 113, CBMU 302 and RCBC Davisville, divided their time between classroom and field hands-on training.

Hydraulic seawater motor reaches endurance milestone

Major modifications to its seawater hydraulic motor have enabled the Naval Civil Engineering Laboratory (NCEL), Port Hueneme, Calif., to achieve a technological milestone: a running time of more than 200 hours under 70-100% rated load conditions.

It has taken the Laboratory more than four years since the prototype was developed and tested to reach this planned breakthrough in the motor endurance.

NCEL Project Leader Stanley Black said the accomplishment represents a major technology advancement, removing the motor from the experimental stage by proving a reliability more than adequate for diver use.

The first underwater hydraulic motor to use seawater instead of oil as the working fluid measures only 3″ x 3″ x 2½″ and weighs five pounds. The reversible motor is a double-entry, balanced vane motor with relatively simple shapes, few parts, and is easy to maintain. Engineers were able to overcome serious developmental difficulties caused by seawater's low viscosity, lack of lubricity, and corrosive nature.

The first compact motor was limited to 50 hours running time (endurance). The limiting components in the original design were 20 special vane springs, each ½-inch long and ⅛-inch in diameter. The redesigned motor incorporated such new features as a floating rotor and different vane configurations to reduce spring stress. The springs themselves were redesigned to reduce buckling and to extend fatigue life.

A seawater hydraulic motor, developed by NCEL exceeds 200 hours running time and is considered a technological milestone by engineers. Observing the planned breakthrough in motor endurance are NCEL Commanding Officer, Capt. N.D. Falk, CEC, USN, Project Leader Stanley Back, left, and Project Engineer Bruce Farber.

The Navy looks for ways to cut the cost of HAZARDOUS WASTE

By JERRY THOMAS

Continued from front cover
production of such waste products resulting in big savings to the government. At the Naval Civil Engineering Laboratory (NCEL), Port Hueneme, Calif., for example, the Environmental Protection Division works to reduce the generation of hazardous wastes by means of new technology, techniques, improved operational procedures, and closer cooperation with environmental protection regulators.

Charles Imel, director of NCEL's Environmental Protection Division, said the Lab's multi-faceted hazardous waste project concentrates on conservation of materials and energy. New research and development is being carried out in the areas of reduction, recovery, and reuse to eliminate costly transport, treatment and disposal of hazardous, toxic and industrial wastes.

A unique chrome plating process has been sited as an example of such major technological developments. The chrome plating process will eliminate millions of gallons of hazardous waste waters a year and save approximately $85 million during the 10-year life cycle.

After two years of evaluation and development, NCEL has produced a customized metal finishing process that chrome plates vital high-performance parts aboard ships, on aircrafts, and in sophisticated weapons. Productivity is increased and the quality of plated parts is improved by reducing the rejection rate of plated parts by as much as 40%.

Field tests of the new technique confirmed "zero" discharge of effluent (rinse waters) thus eliminating 100 million gallons of hazardous wastes a year.

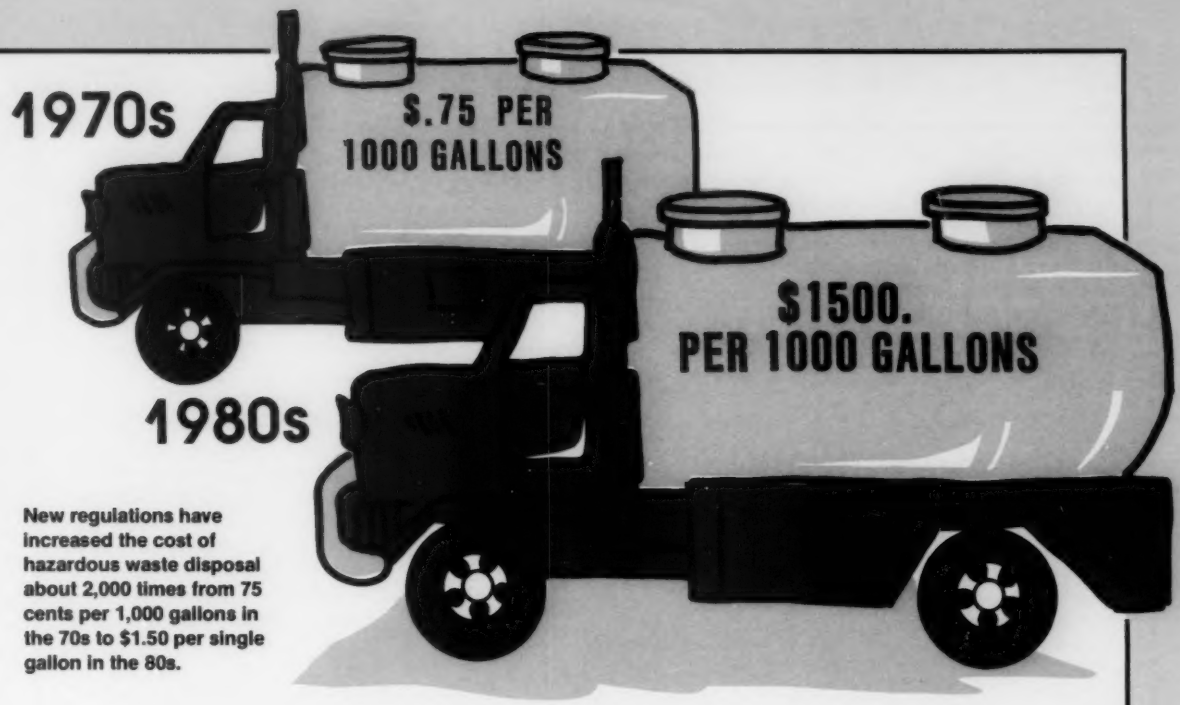
The retrofit of chrome plating tanks involves three steps. First, a change must be made from a current to a voltage regulated process using different configurations of holding racks. A conforming anode system has been adapted ensuring an anode identical in shape as the part it is plating. This ensures isolated plating of each part within the same tank.

Second, in the rinse tank, a spray washes the part after plating. The rinse water is returned to the plating tank reducing discharge to "zero" or no hazardous waste water.

Finally, a continuous stream of plating fluid (chromic acid) passes through an electrochemical filter. It removes such contaminates as degenerated chrome, iron and dirt and returns the clean plating solution to the tank for reuse. A 1,000 gallon plating tank is recycled six times daily to maintain its quality.

The new process will be operational at four naval activities by early 1985, and the Navy wants the remaining 50 chrome plating plants operational within two years. Army and Air Force officials have expressed interest in the process and a briefing is scheduled this winter at Pensacola, Fla., where the first system was installed this year.

In addition to the chrome plating process, the Laboratory has recently developed and tested a process to recover and reuse water and fire



New regulations have increased the cost of hazardous waste disposal about 2,000 times from 75 cents per 1,000 gallons in the 70s to $1.50 per single gallon in the 80s.

fighting chemicals from training operations. The system involves ultra-filtration to separate the emulsified fuel oils and combustion products from the liquified fire fighting chemicals and water. A reverse osmosis process separates the fire fighting chemicals from the water. Both can be used again. This system can reduce by 90% the toxic/hazardous waste waters produced at more than a dozen fire fighting training activities.

Product recycling is a key element to reduction of hazardous waste and the costly disposal of waste materials. For the past year, NCEL has been investigating various paint stripping operations in an effort to identify significant reduction, recovery and reuse opportunities for the hazardous waste stream. One option being considered is a spray-applied paint stripper that can by recycled coupled with an investigation into the physical, chemical and biological treatment processes for hazardous wastes.

In the Navy's seven shipyards, 10 million gallons of hazardous waste water is produced each year. The cost of disposal is consuming a significant proportion of every ship's maintenance funds. NCEL is evaluating new methods, materials and hardware systems to reduce the quantities of hazardous waste waters and is testing a recycling system that strips spent detergents from wash/rinse waters. This will permit the waters to be reused 10 or more times thus reducing the disposal cost in excess of 90 percent.

Continued research into elimination of hazardous waste will result in big savings to the Navy over the upcoming years.

You can help!

Concern continues to mount over the growing problem of hazardous waste. The environmental implications of such waste coupled with costly disposal makes the issue a real concern of increasing importance.

In an effort to keep its readership updated on this timely topic, *The Navy Civil Engineer* magazine is requesting submittal of articles on the subject of hazardous waste clean up and prevention. Articles will be considered for future publication.

Author's guides are available from the editorial office by writing to Navy Civil Engineer, Navy School, Civil Engineer Corps Officers, Code C20M, Port Hueneme, CA 93043-5002.

Writers who would like to discuss story ideas with the editor are encouraged to call on autovon 360-3104, FTS 799-3104 or commercial (805) 982-3104.

reader's comments/questions

departments

Should CEC be changed to CDP?

I was uncertain whether to respond to the two letters in the Winter issue first as a woman or as an architect. But male or female, architect or engineer, we are all design professionals. The Corps requires the talents, skills and expertise of all the disciplines.

Together we design, manage, and build. We each could, if required, design a project by ourselves — foundations, structure, utilities, size of pipes and ducts. (At least I hope my six years at the University of Hawaii weren't wasted!) But if we did it alone, the end result would not be as complete as it would be if we all contributed that divine spark we each have. It is that unity which makes the Corps and our civilian counterparts strong.

Heaven forbid that after 107 years we should change our name but would anyone go for the Corps of Design Professionals, the CDP?

Ensign S. J. Hixenbaugh, CEC, USNR

Thank you for responding and for setting the record straight.

RAdm Zobel shares letter with readers

Dear Admiral Zobel:

The information in the *Navy Civil Engineer* is always excellent. However, the article "Who were the first Seabees" in the winter issue was not only factual but very timely. The First Construction Battalion (?) was having its annual reunion in Charlotte, North Carolina, on the fifth of May and all attendees were able to obtain a copy of the magazine which they appreciated. It is always nice to know that they are not forgotten. It was an excellent article because it correctly placed each of the Seabee units in proper perspective.

The reunion attracted about one hundred forty people (husbands and wives) which is a remarkable turnout after forty years. The credit should be given to Charles E. Mischler who works on the reunions twelve months a year. The officers who attended were Cdr. W. Ralston and myself who were with the unit for its entire duty. Normally, Harry Wallin attends but he was unable to come this year.

Although I continue to enjoy all of the articles in the *Navy Civil Engineer*, the efforts of your magazine staff to remember the first Seabees was particularly appreciated. Possibly, a follow up article might encourage the men in the other units to have a reunion or join with our group.

Capt. William T. Clampet, CEC, USN (Ret)

Chief's answer to Capt Clampet

Dear Captain Clampet:

Appreciated very much your comments concerning the *Navy Civil Engineer* and in particular the article concerning the "first Seabees." To follow up on your suggestion of a possible future article, I'm sending to the magazine's editor a copy of your letter . . . for his consideration.

Congratulations to each member of the "First Construction Battalion" on that remarkable turnout for your reunion! It's great to know that even 40 years later, things are still being "WELL DONE."

W. M. Zobel Rear Admiral, CEC, USN

Thank you, Admiral Zobel, for sharing your letter from Capt. Clampet along with your answer to him. It was a pleasure, of course, to read compliments directed to the magazine's editorial staff and I wish we could claim all the credit, but we can't. Instead, we must give credit to Vincent Transano, command historian at Port Hueneme, for writing the article (loads of research) about the first Seabees. We must also publicly thank "First Seabee" Charles E. Mischler who gave us a lot of help in rounding up the "then" and "now" photographs of ex-Seabees for publication with the article. We were happy to be able to provide Mischler with enough copies of the Navy Civil Engineer *(at his request) to give all attendees of the reunion of the first Seabees.*

Regarding your idea of "follow-up" articles on the first Seabees, Capt. Clampet, we are always very pleased to receive articles that are oriented towards the Seabees, CEC or NAVFAC. We will consider almost anything and will even do some rewrite if necessary. We are also most anxious to receive short articles that describe incidents or actions that are historical in nature for a rather new feature in the magazine entitled "Moments in History." See the back cover of the Spring 1984 issue for an example. The articles should not be longer than 500 words or about two typewritten pages (double spaced), and be accompanied by a photograph or two or artwork if possible.

Reader corrects Seabee history at Gulfport

I have read with great interest the Winter issue of *Navy Civil Engineer*, particularly the article "Who were the first Seabees?," which mentioned a number of old friends, and learned for the first time that the Bobcats were originally the First Battalion. I had always known of them as the First Detachment.

On the score of another first, I enclose an edited copy of page 27, which reflects the correct history of Gulfport. The error in the article probably arises from the fact that the Sixth passed through Gulfport before the station was commissioned (June 26 to July 6, 1942). At the time the only other uniformed personnel present on the scene were four CEC officers, headed by Commander (later Commodore) C. T. Dickeman, who were administering the construction contracts.

Continued on page 15

Point paper: a powerful and effective staff tool

By CDR W. R. MITCHUM
PWC, Subic Bay

SUBJECT

How to Write a Point Paper

BACKGROUND

A longstanding military staff technique is the point paper. The point paper was derived to allow a military decision maker to be provided in very condensed form all of the pertinent facts about a particular problem or situation; a brief and very well thought-out analysis of the situation, and a specific recommendation for action. This classic military staff technique is very easily adapted to any administrative or management process when decision making is necessary.

DISCUSSION

The key to a good point paper is adoption of the completed staff work approach. A staff member preparing a point paper must completely research the issue at hand, must thoroughly analyze the situation, consider alternatives, and carefully think out a course of action that in their judgment solves or best addresses the problem at hand. A properly written point paper concisely and decisively leads a manager to act.

FORMAT

A point paper must be constrained to one typed page. The arrangement of paragraphs is flexible to accommodate the specific problem or issue being addressed but will generally follow the format of this paper. Paragraphs must be short and punchy and must contain positive statements of fact without excessive data or details. The sequence of paragraphs in a point paper must flow to a conclusion and must end with a recommendation. The drafter of a point paper must know the issue thoroughly and intimately in order to reduce it to a good point paper. This paper is in point paper format.

CONCLUSION

The point paper is an effective and efficient staff technique that allows an issue to be defined and a positive course of action to be decided upon in minimum time.

RECOMMENDATION

Every aspiring manager and junior military officer should strive to learn to write clear, concise and effective point papers and should use this technique regularly to guide their superiors' actions.

CORROSION

Solving the mystery of cathodic protection

By FRED S. NAKAMURA
P.E., Hawaii
PACDIV

Although most of the classic methods of preventing corrosion, such as the use of coatings, are well known, there is still some mystery about the use of cathodic protection (CP) for this purpose. Perhaps this mystery is a result of unfamiliarity with the terminology or lack of training in this area among those who are responsible for combating corrosion. CP is now an accepted method of corrosion prevention, especially on underground pipelines and tanks. In fact, the latest NAVFACENGCOM instruction on corrosion control requires the application of cathodic protection on natural gas and POL pipelines and storage tanks.

What is Cathodic Protection? Cathodic Protection is an electrical method of preventing corrosion of metallic structures and should be an important part of any overall corrosion control program. It operates by passing direct current continuously from electrodes which are installed in an electrolyte, normally soil or water, to the structure to be protected. In this process corrosion is not eliminated but is directed to a less costly and expendable material while the more valuable structure is protected.

The majority of CP systems at Navy shore facilities is used to prevent corrosion on steel structures in soil or water. Common applications of this technique are in the protection of buried utilites, the interior of water tanks, waterfront structures, sewage treatment equipment and POL storage tanks and pipelines.

How Does CP Work? In order to understand the principles of CP, one must be familiar with the mechanism of corrosion. Corrosion is an electrochemical reaction involving metals, chemicals and water which combine to form cells capable of generating electricity. When iron or steel is placed underground, the energy imparted to the metal when it was refined wants to be released and the metal wants to revert to its native state from which it was derived.

The chemical changes occurring during this reversion process (rusting) are accompanied by a transfer of electrical energy. This is why the corrosion process is said to be an electrochemical reaction. It involves contact between a metal and an electrically-conductive solution called an electrolyte (normally soil or water); and the flow of electric current in the metal, in the electrolyte, and from one to the other.

The area where the current leaves the metal and flows into the electrolyte is the spot where corrosion occurs. Cathodic protection is a way of stopping this current from leaving the structure by overpowering it with a stronger direct current from an external source.

Corrosion is mitigated or arrested when the higher intensity CP currents prevent the corrosion currents from leaving the structure and entering the electrolyte.

The two principal means used to provide the external CP currents to protect metallic structures are galvanic (sacrificial anode), and impressed current (rectifier/groundbed). In each method, a direct current supply is made available for the protection of the metallic structure. As shown in figures 1 and 2, the anode is the electrode which is sacrificed and from

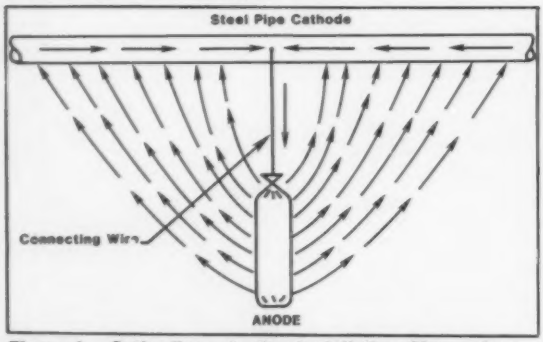


Figure 1. Cathodic protection installation. Magnesium.

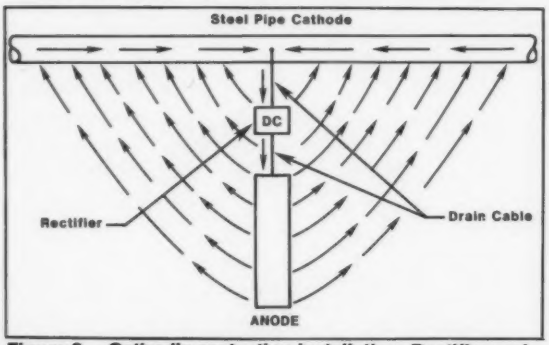


Figure 2. Cathodic protection installation. Rectifier and steel anode.

which the current leaves to enter the soil and flows toward the metal structure being protected. The cathode is the metallic structure which receives the CP current and is protected against corrosion.

What Can CP Do? Cathodic protection should be able to stop or slow corrosion of metallic structures immersed in any electrolyte. The majority of CP systems at Navy shore facilities are used to prevent corrosion of steel structures in soil or water. Properly applied and maintained CP can mitigate the loss of metal and the resulting pitting from underground corrosion.

Cathodic protection is most economical when it is used in conjunction with good coatings. The current required to protect a structure is proportional to the bare area of metal, and therefore, the better the coating the less current required.

The electrical energy required to protect a bare pipe with CP may be hundreds of times greater than a coated structure. Unless CP system are properly operated and maintained, corrosion may continue to occur and the costs to install the CP are wasted.

What CP Cannot Do. Cathodic protection is a powerful weapon against corrosion. However, it cannot replace metal already lost to corrosion.

Cathodic protection cannot reach through a piece of metal from one body of electrolyte to another. For example, it will not protect the interior of a buried steel waterline if the CP system is installed in the soil to protect the exterior of the waterline.

Cathodic protection is not effective against atmospheric corrosion, i.e., above ground structures. These are normally protected with an effective coating system.

Adverse Effect of CP Too much CP can cause as much or more harm than too little. Therefore, adjustment of CP systems should be done only by qualified people. Too much CP can cause coating damage, and this damage can take place quite rapidly if the structure is severely overprotected.

When an impressed current type CP system is used to protect buried structures, there is a risk that the protective current may cause increased corrosion of nearby buried structures that are not part of the protected system. This effect is called interference.

Under this condition, some of the CP currents on their way to the buried structure being protected are picked up by the foreign structure. No harm is done at this pick-up area of the interference or stray current.

In fact, there will be some protection to the foreign structure. However, corrosion will occur in the area where this stray current leaves the foreign structure. Therefore, proper design of CP systems must include consideration of all foreign structures which could be adversely affected.

Current Initiatives. NAVFACINST 11014.51, Corrosion Control of Shore Facilities, which was recently issued, details the policies and responsibilities of the CP program at each level within the NAVFACENGCOM family. The instruction outlines responsibilities in implementing an effective corrosion control program with continuing, coordinated effort involving activities, NAVFACENGCOM, EFDs and NAVCIVENGLAB.

An effective corrosion program will require the joint effort of all within the NAVFACENGCOM family. NAVFACENGCOMs re-emphasis of the program plus the issuance of NAVFACINST 11014.51 is the first step in this direction. MO-306, Operation and Maintenance of CP Systems, is presently being updated.

The design manual on CP system is scheduled for updating next year. Increased funding for corrosion control surveys at activities is anticipated in the coming years. Additional corrosion control courses are being sponsored by the EFDs. NAVCIVENGLAB is increasing efforts in research in cathodic protection systems and is available for evaluating materials failures.

With the re-emphasis in the corrosion control program and initiatives being taken, the Navy's estimated annual corrosion losses of one-half billion dollars can be expected to be reduced dramatically. □

reader's comments/questions

departments

Continued from page 12

his staff, I can claim to be the first "Seabee" officer at Gulfport; I arrived there on June 19, 1942 as advance agent of the Sixth, of which I was then exec. Those were hectic days; the Sixth was assembled for the first time at Camp Bradford on June 15-16, 1942, and departed on June 24, arriving at Gulfport June 25 and 26. We left Gulfport on July 6 and detrained at Moffett Field on the 10th and 11th; left Moffett Field on the 20th and sailed from San Francisco and Oakland on the 21st.

On (about) August 17th we disembarked at Espiritu Santo, and on the 29th the first half of the battalion sailed for Guadalcanal. We were extremely happy to have the 26th arrive at Christmas to relieve us — perhaps the best Christmas present ever — and on January 5, 1943, we were off for two months R&R in Auckland, New Zealand.

Hark Ketels at the Museum has a copy of our battalion history.

Mark H. Jordan, P.E.
Captain, CEC, USN (Ret)
(Sixth Seabees, 1942-1944)

Thank you for your historical facts and a special thanks for what you did for our country.

Got a question, comment, suggestion, or gripe? Please send it to:

Editor, Code 20M, CECOS, Port Hueneme, CA 93043

RAdm Jones, Como Kelley take NAVFAC helm

RAdm Jones relieves RAdm Zobel; 1200 attend change of command

RAdm. John Paul Jones, CEC, USN, assumed the duties of Commander, Naval Facilities Engineering Command and the Chief of Civil Engineers Aug. 31, 1984, relieving RAdm. William M. Zobel of the post. Filling the billet vacated by RAdm. Jones is Como. Frederick G. Kelley, CEC, USN.

RAdm. Jones was commissioned an ensign upon graduation from the United States Naval Academy in 1954 first serving as a line officer before transferring to the Civil Engineer Corps in 1957.

He received his bachelor of science degree in civil engineering from Rensselear Polytechnic Institute and holds a master's degree in civil engineering from Stanford University at Palo Alto.

Since July 1981, RAdm. Jones has served as the Deputy Chief of Civil Engineers. RAdm. Jones is a registered professional engineer in the Commonwealth of Virginia and has attended the U.S. Naval War College in Newport, R.I. He is a member of the Society of American Military Engineers, the Naval Institute and the American Society of Civil Engineers.

Vice Commander, Naval Facilities Engineering Command and Deputy Chief of Civil Engineers, Como. Kelley reported to his new assignment in Alexandria, Va., following duties as commanding officer, Western Division, Naval Facilities Engineering Command, San Bruno, Calif.

RAdm. John Paul Jones, Jr., CEC, USN, NAVFAC Commander and Chief of Civil Engineer Corps.

Como. Frederick G. Kelley, CEC, USN, NAVFAC Vice Commander and Deputy Chief of Civil Engineer Corps.

Como. Kelley graduated from Pennsylvania State University in 1958 with a bachelor of science degree in civil engineering and was commissioned an ensign the same year following completion of the Naval Reserve Training Corps program at Penn State.

He later attended Georgia Institute of Technology earning a master's of science degree in civil engineering. Como. Kelley is a registered professional engineer in the state of Mississippi, a member of Chi Epsilon, a national honorary engineering society and a fellow in the Society of American Military Engineers.

PH1 John Buffalo's article 'Wave Action' wins cove

PH1 John Buffalo is presented the Commander's Award for editorial excellence from Cdr. Les Evans, Commanding Officer of RNMCB-16 in Los Alamitos, Calif.

FOR EDITORIAL EXCELLENCE

PH1 John M. Buffalo, USNR, geologist and assistant public affairs officer assigned to RNMCB-16, Los Alamitos, Calif., was presented with the Commander's Award for Editorial Excellence for his contribution to the *Navy Civil Engineer Magazine*. PH1 Buffalo's article entitled "Wave Action," appeared in the issue for Spring 1983.

Presentation of the bronze plaque award appropriately inscribed was made by Cdr. Les Evans, Commanding Officer of RNMCB-16, at one of the battalion's regular meetings on August 19. Cdr. Evans also read the contents of a letter received by PH1 Buffalo from RAdm. W.M. Zobel, Commander and Chief of Naval Engineers. The letter said in part, "The Naval Facilities Engineering Command encourages the submission of articles by officers, civilian professionals and enlisted who are affiliated with us. It is particularly gratifying to see such quality work submitted by a member of the reserve community and from a rate not usua with engineering expertise. Your obv research and the readability of your display that you are no stranger to th technical writing. Your efforts have greatly to the quality of the *Navy Ci* I hope we can expect contributions f future."

PH1 Buffalo, who is 35 years old, record of accomplishments. He has degree in geology and a bachelor's d operations management. A second a "Earthquakes: The big one is comin in the Summer 1984 issue of the *Na Magazine*, and he is writing another subject of volcanoes for possible fut He is also writing a book about one hobbies — railroading. In civilian li is the Assistant Director of the Linc Development Center for the Redon School District.

Katie Bender joins magazine staff

Katie Bender is the new Associate Editor of the Navy Civil Engineer Magazine. She reported for work at the editorial offices located in the Naval School, Civil Engineer Corps Officers (CECOS), Port Hueneme, Calif.

Bender brings to her position, a wealth of experience and education in the communications field. She graduated with honors from Washington State University receiving a bachelors degree in communications majoring in public relations with a minor in marketing.

Bender came to Southern California from her home state of Washington in 1981 and joined the staff of the CBC Recreation Services Division as a Publicity Specialist. There she distinguished herself over the ensuing two and a half years by coordinating press releases, posters, banners, media visits, radio promotions, and arranging special events and promotions such as the 1983 Armed Forces Softball Tournament, slide shows, surveys, facility presentations and others.

Katie Bender

According to magazine editor, Les Helsdon, Katie Bender will participate in most phases of the magazine's production in her new post. As part of a small staff, she will help produce the 32-page, quarterly magazine with technical and other news articles from the Civil Engineer Corps, Naval Facilities Engineering Command, and Seabee communities.

Bender will also write original material, edit the works of others, research information and help plan the format, content, photos, and design of the magazine. In her new role, Bender works closely with other creative personnel who make up the magazine; artists, photographers, compositors, designers, and printers to name a few.

veted Commander's Award

usually associated
r obvious thorough
your finished product
r to the art of
have contributed
vy Civil Engineer, and
ions from you in the

s old, has an enviable
has a bachelor's
or's degree in
ond article by Buffalo,
oming!" was published
e *Navy Civil Engineer*
other one on the
le future publication.
t one of his favorite
ian life, PH1 Buffalo
Lincoln Child
edondo Beach City

HONORABLE MENTION

Four authors received Honorable Mention Awards and letters from RAdm. Zobel for three artlicles which appeared during 1983 (two were co-authors).

★ **Capt. J.R. Jacobsen, CEC, USN, (Ret)** for "Are You Ready for a Major Power Outage?" — Fall issue.

★ **LCdr. Gary R. Henderson, CEC, USN,** and co-author **Lt. Charles M. Dayton, CEC, USN,** for "The CEC and Seabees Involvement in Antarctica" — Fall issue.

★ **Dr. Vincent Transano,** for "Who Were the First Seabees" — Winter issue.

Nominations for the awards were made by an award committee comprised of Capt. John L. Dettbarn, Commanding Officer of the Naval School, Civil Engineer Corps Officers; Marge Holtz, NAVFAC Public Affairs Officer; and Les Helsdon, the magazine's Editor-in-Chief. All feature articles published during the publication year are considered for these awards.

Rare Peary books on display at Adm Ben Moreell Library

By Dianne Thompson

"I shall find a way or make one," was the motto of RAdm. Robert E. Peary who discovered the North Pole on April 6, 1909.

Now available at the Moreell Library, Port Hueneme, Calif., is an extensive collection of rare books covering almost every aspect of Peary's life and career. The collection offers a unique insight into the extraordinary determination and dedication of the man.

Peary's successful discovery expedition capped 25 years of polar excursion and study. While others attempted to reach the North Pole before him, Peary's success was the result of a system he devised for crossing the ice by sleds and making use of support parties.

The Moreell Library's Peary collection is probably one of the most comprehensive groupings ever assembled in a U.S. Navy Library on the subject of Peary and Arctic exploration. The library is grateful to Edward Peary Stafford, grandson of RAdm. Peary, who donated extensively to the newly acquired collection. Among the volumes that Stafford presented the library are *Northward Over the Ice*, a two volume work by Peary and a bound volume of *Hampton's Magazine* from 1909 and 1910 containing articles by Peary describing his final dash for the Pole.

The books will be displayed in the Moreell Library and are available by special request to scholars and researchers in the Civil Engineer Corps community.

For further information, write Dianne Thompson, Director Moreell Library, Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif., 93043-5002.

Making final inspection of the new Peary display of rare books at the Moreell Library are (from left) Capt. John L. Dettbarn, CEC, USN, Commanding Officer of the Naval School, Civil Engineer Corps Officers; Joy Ardalan, CECOS and magazine illustrator; and Dianne Thompson, Moreell Library Librarian.

The "Bear" facts about Emergency Mission Readiness

By LT BRIAN R. KELM, CEC, USN
P.E., Ind.

"We Build, We Fight," is the motto of the Seabees, but that is only part of the story. The Seabees mission also requires quick mobilization of forces and command, control and communication skills. Seabee construction is shown daily at deployment sites throughout the world, but how do the Seabees display an ability to carry out the other elements of their mission? The answer in the Western Pacific is the Kennel Bear exercise series.

> "The most important aspect of the exercise is the realistic and meaningful training NCF personnel receive."

Kennel Bear is a Seventh Fleet, Construction Battalion, Pacific (CBPAC), and Thirtieth Naval Construction Regiment (NCR) sponsored no-notice emergency readiness exercise. It consists of deploying a Naval Mobile Construction Battalion (NMCB) Air Detachment (Air Det) to a remote site for a period of two weeks.

During this time, the Air Det is tasked with performing contingency construction, military training, and community relations work. After the completion of required training and construction, the Air Det redeploys to the battalion main body site, and the entire Air Det supply and equipment allowance is thoroughly inventoried, cleaned and preserved.

A Kennel Bear exercise is held once during each battalion's West Pacific deployment. The exercise is held in conjunction with the battalion's Operational Readiness Inspection (ORI), thus, the battalion's skill and efficiency in exercise execution is considered during selection for the Best of Type Battalion. The most important aspect of the exercise is the realistic and meaningful training Naval Construction Force (NCF) personnel receive.

The Kennel Bear series exercise involves the use of the U.S. Air Force C-130. These aircrafts are provided by the 374th Tactical Air Wing (TAW) based at Clark Air Base in the Philippines. Aircraft are provided at no cost to the NFC due to the Air Force's Joint Airborne Air Mobility Transportation Training (JA/ATT) program. In other words, the Seabees receive free air frames as long as the JA/ATT program provides Air Force personnel with C-130 landing experience on unimproved airstrips and supply, equipment and personnel, air drop training.

In exchange for the training, the 374th TAW airlifts a complete Air Detachment Allowance (TA-41) from the battalion main body to an austere deployment site. An allowance consists of 33 pieces of construction equipment such as five-ton dump trucks, bulldozers, front-end loaders, graders, water trucks and water buffaloes. Also included in the TA-41 allowance are tents, galley equipment, a shower trailer, a water treatment plant and tool kits for all Seabee rates.

The total allowance of equipment and supplies weighs approximately 510,000 pounds and occupies 45,000 cubic feet usually requiring between 20-22 C-130 aircraft. Eighty-nine Seabees of all rates including occupational and non-occupational field 13 personnel comprise the air detachment. A varied mix of all construction rates gives the Air Det the ability to tackle most any type of construction mission.

Seabees deployed in the Western Pacific are usually stationed at Camp Covington, Guam or Camp Shields, Okinawa. The battalion in Guam deploys an Air Det from NAS Agana, Guam, to the island of Tinian in the Northern Marianas. Tinian Island was a large Army Air Corps base during World War II.

Today the area is almost totally overrun with 40 years of jungle growth, but is now a perfect place for contingency mission training. The airstrip remains in exceptionally good condition despite its age — a testimonial to Seabee construction.

Tinian is an ideal place for community relations work as the local government is very willing to provide material for Seabee construction projects. Due to the quality and quantity of work accomplished during past Kennel Bear exercises, a warm relationship has developed between the local people and Seabees from the deployed Air Dets.

The battalion deployed to Okinawa flies its air

detachment to Pohang, South Korea, where construction tasking is accomplished in support of the Third Marine Amphibious Force. Tasking usually consists of improving berthing areas for contingency camps. This may consist of building seahuts or installing shower facilities for Marines. Pohang is an excellent cold weather training area and is an ideal location to exercise the well-known cooperation between Seabee and Marine Corps units.

Kennel Bear exercises are broken down into five phases for ease of evaluation. Each exercise phase displays an integral part of an NMCB's ability to mount, execute and stage an air detachment.

> "The deployment site is under tactical conditions . . ."

The first phase of Kennel Bear, known as the 48 hour countdown, starts upon receipt of a naval message execution order. The order tells the battalion that it has 48 hours to prepare an Air Det for embarkation. The order, in standard five paragraph format, tells the Air Det what to expect at the deployment site, including mission and execution requirements, logistic and administrative problems, and command and control orders. With the execution order in hand, the battalion can then begin the work that must be accomplished prior to the aircrafts' arrival.

All equipment to be taken on the Air Det exercise must be mechanically checked and cleaned prior to air shipment. Supplies, tent camps and tools must be prioritized, palletized and covered with cargo netting for shipment. Most importantly, the personnel must be prepared for deployment.

Individuals are issued combat gear and weapons, briefed on the area and its people, and counseled on resolving personal matters. Finally multiple personnel inspections are held to ensure readiness. After 48 hours, the Air Det, its equipment, and supplies should be staged and ready for deployment at the airfield of embarkation. Once at the airport, the Air Det is ready to begin Phase II.

To ensure that all personnel and equipment are indeed ready to deploy, the 30th NCR conducts Phase II, the Personnel/Joint Inspection. Not only is serviceability of uniforms and infantry combat gear inspected but also checked is each man's knowledge of the chain of command, the mission of the Air Det, the capabilities of his weapon, and the characteristics of the deployment site.

While the personnel inspection is being held, the USAF Air Lift Control Element (ALCE) team, the battalion embarkation staff, and a 30th NCR observer conduct the Joint Inspection of each aircraft load. The inspecting team checks all pallets and vehicles to ensure compliance with Military Airlift Command (MAC) regulations and requirements. With the Personnel/Joint Inspection complete, the Air Det is ready for Phase III of the exercise, insertion/deployment.

When the first C-130 arrives the Seabee Departure Airfield Control Group (DACG) loads the aircraft usually with the aircraft's engine still running. The use of engine running on and off loads provides the quickest possible movement of equipment and supplies. This would be of vital importance in a tactical environment as the aircraft would be most vulnerable to enemy fire during unloading and loading.

The Air Force allows fews units to load aircraft but makes an exception in the case of the Seabees due to the intensive embarkation training held prior to the exercise. When each aircraft is loaded with personnel and equipment, the C-130 departs for Tinian or South Korea.

The deployment site is under tactical conditions, and immediate security around the aircraft and debarkation area is quickly established by Air Det personnel. Once sufficient men and material have arrived, advance patrols begin to secure the future campsite.

When the advance Seabee patrols report that the campsite is free of aggressor forces and under their control, the convoy of equipment and supplies can begin to move up to the campsite. The camp is then

81 MM mortors provide the long range defensive punch for the Air Det on its Kennel Bear exercises.

Aggressors disrupt progress

established with a more permanent defensive perimeter.

Throughout camp set up, aggressor forces attempt to disrupt progress by use of sniper fire, probing, and tear gas attacks. The Air Det operates in this tactical environment for a period of approximately three days. The tactical portion of the exercise ends after a major night assault on the camp's perimeter by aggressor forces requiring the Air Det to launch its final protective fire.

Early the next morning, weapons are cleaned and all personnel board vehicles to the firing range for live fire of all weapons organic to the air detachment allowance. The ranges used in Tinian and Korea are not formal qualification type ranges thus permitting the Seabees to practice field manuevers and fire

> "An Air Detachment can provide 200 days of direct construction effort."

training, something that is not readily available in CONUS. All agree that this realistic training is beneficial.

Manuever and fire training allows the individual fire team leader to take control of his men, manuever them into the proper firing position and engage targets of his choosing. Each member of the fire team acts as he would in a combat situation. As the fire team leader directs his men, the automatic rifleman engages the target while the two riflemen protect him with their M-16A rifles.

With the completion of live fire, the military training portion of Phase III is also complete, and the Air Det can put its full assets into the construction of tasked projects.

An Air Detachment can provide 200 days of direct construction effort. Completed projects in both Tinian and South Korea are a testimonial to the quality of work that can be produced by the NCF. When the Air Detachment is ready to redeploy back to the main body, the Seabees not only leave finished, professional projects but also a good impression of the entire NCF in the minds of the people they have supported.

After about ten days on site, the Air Detachment starts to prepare for the journey back, and thus begins Phase IV, the Redeployment Phase. Everything that had to be accomplished to deploy the Air Det has to be done again in preparation for the retrograde. This time, however, the Air Det does not have the support of the entire battalion as the Air

Community relations work in progress.

Det must embark by themselves. Tools, supplies and tent camps must be palletized, and again vehicles must be checked and washed for air shipment. At the same time, the Air Det still needs the support of these items for the completion of the Air Det's projects and the business of daily living. This is truly a juggling exercise for the Air Det Officer in Charge.

Prior to the arrival of the aircrafts, each of the 20 or so chalks required for redeployment must go through another joint inspection with the on-site ALCE team to ensure compliance with proper MAC procedures. Over a period of two to three days, the loading of each aircraft is again accomplished with the engine running on load an average of only 20-25 minutes for each C-130.

When the first aircraft returns to the main body, the final phase of the exercise begins. During Phase V, Recovery/Accountability, the battalion holds a complete inventory, and replenishes, cleans, preserves and repacks the entire Air Det allowance. The pack up is then placed back in the Air Det warehouse so that the Air Det allowance is ready for the next battalion's Kennel Bear exercise, or a contingency mission which requires deployment of a Seabee air detachment.

The five phases of the Kennel Bear exercise progam are all important and each must receive equal attention. For an air detachment to be able to perform its mission in time of war, it must be able to excel in all five areas. The Kennel Bear exercise series has shown that the Naval Construction Force in the Western Pacific is able to perform its primary mission of construction, special warfare, mobility and command, control and communications.

This exercise program has reinforced the NCF's ability to construct in a hostile environment without relying on local defense forces. Kennel Bear has helped to keep Naval Construction Force fully combat ready. □

situation report

departments

SEACON deploys to West Coast

On June 25, SEACON departed Roosevelt Roads Naval Station under tow of USNS Mohawk on its way to San Diego, Calif. via the Panama Canal. The USNS Narragansett will meet SEACON at NAVSTA Rodman, Panama, and tow it to San Diego after she completes transit of the canal. This is the first time SEACON has been deployed to the Pacific.

SEACON's West Coast deployment is to support the installation of a major new underwater tracking range called Southern California ASW Range (SOAR). SOAR will be located westward of San Clemente Island and the cables will terminate on the island. This project is sponsored by OP-953 and CINCPACFLT with NAVAIR-06 acting as program manager. CHESDIV (FPO-1) is the acquisition manager for the underwater systems less acoustic sensors, and they will be supported by UCT-Two during the installation scheduled to be accomplished in Sept. 1984.

CEC changing from OIS to OCS

The Chief of Naval Personnel has approved a Chief of Civil Engineers' request that new CEC officer accessions attend Officer Candidate School vice Officer Indoctrination School. The change which becomes effective Oct. 1, 1985, will not impact on the CEC collegiate program. Upon graduation collegiates will attend the 16-week OCS course and upon successful completion be commissioned as ensigns. The request was made after completion of a comprehensive study of both curriculum, their interface with CECOS, and the training needs of the Corps.

The study sought ways to optimize a balance of training, retention, recruiting, readiness and cost. The increased military training, familiarization with unrestricted line communities and naval orientation at OCS are expected to further enhance the CEC's already outstanding ability to perform its fleet facility support mission.

TRIDENT contract awarded

On June 24, TRIDENT awarded a $44 million contract to Blake Construction Company of Washington, D.C. for construction of a TRIDENT Training Facility at Kings Bay, Ga. The contract will provide for construction of a 521,000 square-foot facility which is, effectively, a TRIDENT submarine in a building. Installed training equipment — much of it tactical equipment which will also serve as back-up to shipboard systems — will represent an investment many times the cost of the building.

Training laboratories will occupy the middle level of a three-level facility with laboratory and building support equipment below and instructor and administrative offices above. Classrooms will be located on the upper two levels. Initial as well as proficiency maintenance training will be provided to off-patrol crews of the TRIDENT Atlantic Fleet. Construction is scheduled for completion in April 1987 when installation of training equipment will commence. Initial crew taining is set to begin in Jan., 1988 with full operational capability scheduled for Oct. 1989.

This was the largest contract awarded at Kings Bay to date, and it sets the stage for a rapid build up as the bulk of the TRIDENT construction is just over the horizon.

Offshore platform disposal began

Two Navy-owned offshore platforms, called Stage 1 and Stage 2, located 12 nautical miles and two nautical miles respectively seaward of NCSL were condemned several years ago by CHESDIV and recommended for disposal due to significant structural failure of their underwater support structures. CHESDIV has contracted for their removal at the cost of $1,135,880 and efforts to remove the structures began on June 25, 1984. The contractor is Sanford Offshore Inc. of Morgan City, La.

The disposal of Stage 1 and Stage 2 is the largest Navy project of this kind since removal of the ARGUS Island structure in the mid-1970s and the Texas Towers in the 1950s. Stage 1 is a multi-story structure 105-feet square, weighing 780 tons and supported on 16-33 inch piles approximately 60-feet above mean low water. Stage 2 is smaller in size and weighs 440 tons. The contractor will be using a very large offshore crane to lift the structures off of the piles and will dispose of these structures ashore due to environmental considerations.

The Atlantic Alliance — —

(The Infrastructure Story)

Sixteen nations joined together by a common belief in freedom

By CDR BRUCE B. GEIBEL, CEC, USN

THE BEGINNING — AN ALLIANCE

Recognizing the need for economic, social and cultural collaborations and collective self-defense after the Second World War, the foreign ministers of five European countries — Belgium, France, Luxembourg, the Netherlands and the United Kingdom — signed a 50-year pact, called the Brussels Treaty, on March 17, 1948, covering these areas of mutual support.

After the beginning of the Berlin Blockade imposed by the Soviet Union in June 1948, talks on North Atlantic defense began in Washington among the United States, Canada and the five Brussels Treaty Powers.

In December 1948, the Defense Ministers of the Brussels Treaty Powers decided to create a Western European Union defense organization, and negotiations commenced on the drafting of a North Atlantic Treaty.

The seven negotiating powers invited Denmark, Iceland, Italy, Norway and Portugal to adhere to the North Atlantic Treaty and the text was published in March 1949.

The North Atlantic Treaty was signed by the twelve charter members denoted above on April 4, 1949, in Washington, D.C.; later joined by Greece and Turkey in 1952; the Federal Republic of Germany in 1955; and Spain in 1982. The North Atlantic Treaty Organization (NATO) thus consists of 16 member nations united for their mutual efforts for peace and security.

HOW IT WORKS

NATO serves as a defensive alliance which maintains military preparedness in order to prevent war. It is an inter-governmental, not a supranational organization. The various member nations retain their full state sovereignty and independence.

The political task of NATO is to provide for consultation on all political problems of relevance in individual nations, or the alliance as a whole, and to give direction to the military side of the organization.

The military task of NATO in peacetime is to draw up joint defense plans, to set up necessary infrastructure and to arrange for joint training and exercises. It is within this function of the alliance where CEC officers are assigned.

The Navy's Role . . .

The Infrastructure Story

A handful of Civil Engineer Corps (CEC) officers of the United States Navy assigned to NATO commands throughout the European continent is helping to construct, maintain and oversee a vast network of infrastructure designed to assist the NATO member nations maintain the principles denoted in the North Atlantic Treaty.

The Treaty created an Alliance for collective defense of the member nations and is the framework designed to prevent aggression, or to repel it, should it occur.

It also provides for cooperation and consultation in political, economic and other non-military fields. NATO is currently the central focal point of world attention as the world powers debate openly the pros and cons of nuclear armament and disarmament, and deployment of new missiles to Europe. Sidestepping politics and debate, this article will concentrate on the behind-the-scenes story of Civil Engineer Corps officers quietly performing their duties in the military infrastructure arena of the Alliance.

What Is Infrastructure?

Infrastructure is a NATO word that is basically defined as military facilities for joint use of two or more countries or which have a high degree of common interest and which are essential to the operations of NATO forces; it is jointly financed by 13 nations (less Spain and Iceland) plus France for certain projects; managed on the basis of agreed rules, procedures and standards; and implemented by host country agencies or, for special cases, by Supreme Command Headquarters or NATO Agencies.

CIVIL AND MILITARY STRUCTURE

NATO is an organization of sovereign nations, equal in status, and decisions must therefore be expressions of the collective will of all member governments arrived at by common consent. The highest decision-making body and forum for consultations within the alliance is the North Atlantic Council (NAC).

The Council is composed of representatives of each member nation, and is headed by a president, and also has a secretary general who functions as chairman.

On the military side, there is a Defense Planning Committee (DPC) which is composed of representatives of the member nations participating in NATO's integrated military structure. It deals with matters specifically related to defense.

Each year, countries participating in the NATO military structure take part in a Defense Review designed to assess their contributions to a common defense in relation to their respective capabilities and constraints.

The review takes into account planning targets set by NATO and the commitments entered into by each country and establishes a coordinated defense plan for NATO. The plan ultimately conforms to the agreed strategy and makes optimum use of the resources available throughout the Alliance.

> "The parties to this Treaty . . . are determined to safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law. They seek to promote stability and well-being in the North Atlantic area. They are resolved to unite their efforts for collective defense and for the preservation of peace and security . . ."
>
> **North Atlantic Treaty, April 1949**

The highest military body in NATO, the Military Committee, is responsible for making recommendations to the Council and Defense Planning Committee on military matters and providing guidance on military questions to military commanders and subordinate military authorities.

On the civilian side, the NAC has established a number of committees to assist in its task. These committees are supported by the NATO International Staff (NIS), made up of personnel drawn from all member nations. The NIS comprises the Office of Management and the Office of Financial Controller.

It also includes the Division of Infrastructure, Logistics and Council Operations which is involved in, but not limited to, preparing proposals on policy and criteria related to infrastructure matters; proposing future size and shape of the infrastructure programs and their management; and providing technical and financial supervision of the programs.

In order for the Military Committee (MC) and Infrastructure Committee (IC) to function, various staff and action officers throughout the NATO arena review and screen projects prior to submission to the respective committees. The military officers review the projects to determine the NATO minimum military requirement (basically the most cost economical and technically feasible method of construction) and jointly screen them with the NATO International Staff for criteria and financial eligibility.

HOW INFRASTRUCTURE WORKS

A primary function of the Civil Engineer Corps officers, and sister service counterparts from the U.S. and other member nations, is to assist in drafting, reviewing, screening and recommending infrastructure projects for eventual NATO funding and construction.

LONG-TERM PLANNING

First, in planning, requirements must be identified. Secondly, they must be prioritized. The identification of requirements is obviously necessary because it establishes full scope of the need. Priorities are essential because, normally, funds are never sufficient to accommodate all known requirements.

Projects desired are placed into a long-term plan (over 5 to 10 years duration) and then broken down into manageable yearly groups of projects referred to as "slices" in NATO-ese. This process consists of two distinct phases — programming and implementation.

The programming phase begins when a potential user identifies a military need he believes qualifies for funding. If the project is not located in the user's home country, he must seek agreement from the local authorities to take on host-nation responsibilities. After incorporation into a long-term infrastructure plan, the joint host/user nations submit the project to the Major Subordinate Command (MSC) where it is screened for justification and content.

If concurrence on military need, justification and urgency is reached, it is then submitted along with other prioritized projects to the Major NATO Command (MNC) for further screening. Screening is the NATO process of checking the project information provided in the submissions and generally assessing the projects.

Once a grouping of projects is selected by the Major NATO Command to match military needs, prioritization, and available funding, a Recommended Slice (program) is submitted to NATO for formal review by representatives of all nations in the Military Committee and Infrastructure Committee, and then approved by the NAC/Defense Planning Committee (DPC). This formal Alliance approval process triggers the second phase of the infrastructure process — implementation.

Having been through the programming phase and its inclusive levels of screening, the infrastructure project goes through a second phase called implementation — where the design, bidding, construction and final inspection process takes place prior to eventual incorporation into the NATO infrastructure inventory and final auditing of the activity.

The entire process is often long and tedious, taking upwards to five years or more before a project is usable in the NATO arena. The CEC officers assigned to NATO are deeply involved in each step of the process as they steer projects from conception to preparation to screening to presentation to NATO, to fund request and authorization at funding time, and finally to final inspection and recommendation for acceptance into the NATO Inventory.

Due to rotation of officers, and inevitable delays involved in processing some projects from cradle to grave, a string of as many as from five to seven CEC officers may eventually

become involved in one single project. To illustrate how these officers fit into the NATO infrastructure process, consider the organizations and personnel involved.

NATO ORGANIZATION IN EUROPE

One must look no further than a world atlas to determine the strategic area covered by the NAC. This area is divided among three Major NATO Commanders (MNCs): Supreme Allied Commander Europe (SACEUR) with headquarters located in Casteau (near Mons), Belgium; Supreme Allied Commander Atlantic (SACLANT) with headquarters located in Norfolk, Virginia, and a Representative in Europe (SACLANTREPEUR) located at NATO Headquarters in Brussels, Belgium; and Commander-in-Chief Channel (CINCHAN) with headquarters located in Northwood (near London), England.

NATO Commanders are responsible for the development of defense plans for their respective areas, for the determination of force requirements and for the deployment and exercise of forces under their command.

ALLIED COMMAND EUROPE

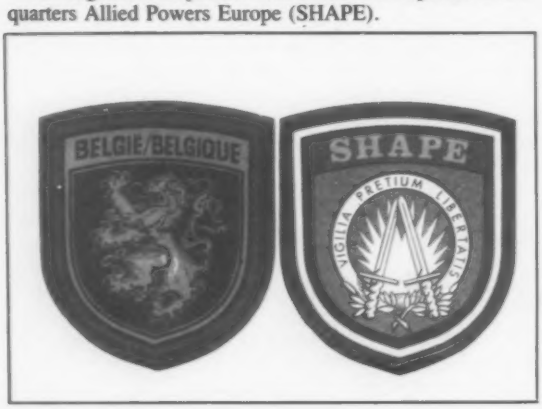
Allied Command Europe (ACE) covers the area extending from the North Cape to the Mediterranean and from the Atlantic to the eastern border of Turkey, excluding the United Kingdom and Portugal, the defense of which does not fall under any one single MNC. ACE is NATO's senior military command in Europe.

Established in 1951, its mission is to support the political objectives of NATO — peace and security — by militarily deterring possible aggression against NATO Europe and, should deterrence fail, defend Western Europe against aggression.

Allied Command Europe's major subordinate commands (MSCs) are Allied Forces Northern Europe (AFNORTH); Allied Forces Central Europe (AFCENT); Allied Forces Southern Europe (AFSOUTH); and United Kingdom Air Forces (UKAIR).

Supreme Headquarters Allied Powers Europe

The highest headquarters within ACE is Supreme Headquarters Allied Powers Europe (SHAPE).



SHAPE is located about 30 miles southwest of Brussels (near Mons) and has been given municipal status by the Belgian government. Led by the Supreme Allied Commander Europe (SACEUR), the international military staff at SHAPE and its subordinate military headquarters plan and coordinate the deployment of NATO's military forces in ACE.

By way of history, the first SACEUR was General Dwight D. Eisenhower, who was appointed to Command in December 1950.

Allied Forces Northern Europe

AFNORTH comprises the countries or Norway, Denmark and that part of the Federal Republic of Germany north of the Elbe River, and the adjacent sea areas. AFNORTH was established in 1951 with headquarters located at Kolsas, Norway, approximately 12 miles west of Oslo.

AFNORTH is one of four MSCs under the command of SACEUR. Its mission is to control and protect the air, land and sea routes in its geographically assigned territory, covering more than 1,200 miles from the Russian border in the north down to Germany.

Allied Forces Southern Europe

AFSOUTH comprises the countries of Italy, Greece and Turkey and the defense of NATO sea lines of communication throughout the Mediterranean Aegean, and Black Seas. AFSOUTH command was established in 1951, with its first headquarters located aboard the USS Mount Olympus in the bay of Naples.

It is now located in the Bagnoli district of Naples. AFSOUTH is another of the MSCs operating under command of SACEUR. Its mission is to defend the Southern Region and preserve the integrity of NATO territory. The three regional countries along with the United States and the United Kingdom are the five nations represented on the AFSOUTH staff.

Other Commands In Europe

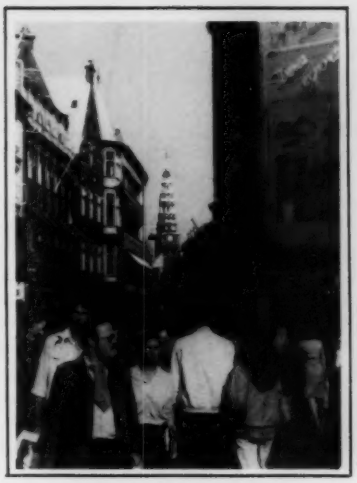
The other two MSCs in ACE are Allied Forces Central Europe (AFCENT) and United Kingdom Air Forces (UKAIR), the newest MSC in ACE, having been created in 1975. AFCENT is the largest of the MSCs covering the land region from the Elbe River in the north for some 500 miles south to the Swiss and Austrian borders.

Forces from seven nations — Belgium, Canada, Germany, Luxembourg, the Netherlands, the United Kingdom, and the United States — contribute to the mission of AFCENT to defend the Central Region. UKAIR is charged with the mission to train, equip and provide an effective air force to support SACEUR. There are no CEC officers assigned to AFCENT or UKAIR since these two regions predominately support army and air force installations.

THE ATLANTIC OCEAN COMMAND

The second of the three MNCs is the Supreme Allied Command Atlantic (SACLANT), which was established in

Amsterdam, Holland.



Copenhagen, Denmark.

Brussels, Belgium.

Street scenes in many countries look surprisingly the same.

1952, with headquarters located in Norfolk, Virginia. SACLANT covers an area of approximately 12-million square miles of Atlantic Ocean.

This area extends from the North Pole to the Tropic of Cancer, and from the coastal waters of North America to the coasts of Europe and Africa, except for the English Channel and British Isles, which are under the command of the CINCHAN, the third of NATO's MNCs.

SACLANT has the peacetime role for preparing defense plans, conducting joint training exercises, establishing training standards, and supplying the NATO authorities with information on his strategic requirements. SACLANT's primary wartime role is to provide for the security of the Atlantic area by guarding the sea lanes and denying their use to an enemy in order to safeguard them for the reinforcement and resupply of NATO Europe with men and material.

The Iberian Forces Atlantic

The Iberian Forces Atlantic (IBERLANT) is an MSC under SACLANT with headquarters located in Lisbon, Portugal. Its mission is to support the SACLANT mission of maintaining open sea lanes and denying their use to the enemy in the Southern Area, specifically Portugal.

The Eastern Atlantic Command

The Eastern Forces Atlantic (EASTLANT) is another MSC under SACLANT and was established in 1952 with headquarters in Northwood, England. CINCEASTLANT's mission is to support the SACLANT mission of maintaining open sea lanes and denying their use to the enemy in the Eastern Atlantic area.

THE CHANNEL COMMAND

When ACE and Allied Command Atlantic (ACLANT) where instituted in 1951/1952, the channel sea areas, which at that time were the responsibility of the Western European Union, and which are now under the command of ACHAN, were not included under continuous NATO control. This was partially rectified in 1956, however, when international status and common-funding principles for a Channel Command were approved.

CINCHAN was placed on an equal footing with the other MNCs with authority to deal direct with NATO's Military Committee in September 1966.

Having reviewed in some depth the more official portions of the NATO Infrastructure organization, the functions of the various components, and the role played within this framework by CEC officers assigned to NATO Commands, consider the personal aspects of life in Europe. NATO assignments offer perhaps the best of both worlds.

PEOPLE AND CUSTOMS

All personnel assigned to NATO commands, and their dependents, have had to make adjustments in personal lifestyles, working habits, eating habits, recreation, and driving techniques. The pace one experiences in Europe is generally much slower than in the U.S.; and, is particularly true in some of the warmer countries to the south, where "siesta" time is still a requirement to make it through the hot and humid summer months.

The different languages spoken in the 16 NATO countries cause special problems that are frustrating at times, but sometimes provide the humor when necessary to break the ice with the locals.

For example, the word CEC officers use most frequently to describe buildings and bases — facilities — is translated in NATO-ese as "infrastructure." The British accuse Americans of speaking improper English and refer to it as a new language called Americanese.

Expressions in England like "may I knock you up in the morning" might offend some feminine parties in an American hotel, but in an English hotel simply means "may I awaken you in the morning" at a certain time. Even Navy words like "head," "bulkhead" and "deck" are most cer-

tain to elicit some strange stare or reaction when uttered to counterparts in sister services of the Army and Air Force.

Houses on the local economy vary to the extremes and many are moderately heated and lighted since heating fuels, natural gas and electricity costs are from 50 to 100% higher than in the U.S. Most kitchens have limited built-in cabinets; most bedrooms have no closets — many use portable wardrobes or chest of drawers; and one must use 220-110 volt transformers for American television, appliances and radios. Most homes have little or no front yard because houses are located close to the sidewalk or main street.

Use of the metric system is prevalent throughout Europe. Speed limits are posted in kilometers; gasoline is sold in liters or U.K. gallons; food at the economy markets is sold in grams and kilograms; and fabric is sold by the meter.

Temperatures are given in centigrade. Fortunately, the metric system is taught in the overseas international and DOD schools and that helps. The children may have great difficulty when returning to the states, however, in trying to understand feet and yards, and quarts and gallons.

There are McDonalds, Kentucky Fried Chickens, and Burger Kings located throughout Europe, and fast food is the name of the game here too. However, in the thousands of small local restaurants in each European country visited, one may expect to make a whole evening of eating, drinking, and waiting for the bill.

Two hours is probably the norm, while three or more hours is not unreasonable, especially when there are several people in the party, and dessert and coffee are ordered after the meal. The key thing to learn is how to get the waiter's attention to gather up the bill.

Most restaurants figure on only one sitting per table during the evening, and are not likely to hurry your departure. If an unexpected number of people show up at a full restaurant, the maitre d' is more inclined to simply state he is full for the evening, and suggest politely one make a reservation in advance the next time. His restaurant may be only one of from 15 to 20 surrounding the town square, however, and one merely needs to hunt for one not so full.

Sports are different in Europe. Football is soccer here, and one must differentiate between "American" football, and "European" football (which is soccer to the rest of the world). One young dependent was overheard telling his dad that "cricket" was a small insect that chirps in the woods. Cricket is also a game for two teams of 11 members each that is played on a large playing field having two wickets some 22 yards apart, the object being to score runs by batting the ball far enough so that one is enabled to exchange wickets with the batsman defending the opposite wicket before the ball is recovered.

Despite the different lifestyles, sports, foods, and what Americans might consider slow service, there are opportunities to further the good will exchanged by all nationalities — both from a professional and personal basis. Americans are all "Ambassadors" overseas, whose actions and reactions are observed by overseas hosts.

A little language learned in the host country goes a long way; and, even in Paris, where one is accustomed to reading in the papers, hearing on the radio, or seeing on the TV, the apparent indifference of the Parisians towards non-French speaking persons, one can get along just fine with a few words of French, a healthy respect for the host nationals, their customs and mannerisms, and a friendly smile. The "ugly" American will always be the "ugly American" in any country, even in America.

LIFE FOR THE AMERICANS

Many people still opt for life in "Little America," and with good reason in many localities. The ones who seemingly enjoy their tours the most and remember the good things the longest, however, are those who live on the local economy or in the international communities, and those who do not isolate themselves behind the walls of their housing unit.

They take the opportunity to learn the local language, the customs, experience the foods and drink, and meet the local people, and take back to America a whole photo album of experiences that cannot be gained by the average American.

The strong U.S. dollar to local currency exchange makes this tour even more enjoyable, as the dollar stretches just a little further on the local economy. Many families take the opportunity to swap children on occasion so the parents can take that long awaited vacation together for a change without the kids.

Stateside news comes from a variety of sources. There is no nightly newscast on AFN-TV nor are there daily newspapers. Likewise, there is not so much depressing news constantly as it is in the States. I think many are happier without the daily drum beat of doom. However, the European edition of *Stars and Stripes* is available daily for 15 cents and includes news, feature material, comics and sports.

AFN-TV and radio provide to most locations the usual complement of news, music, and entertainment. Many broadcasts are from 6 to 8 months old, and are "old news" or merely fillers. Consequently, the entire family spend most of their time outdoors, traveling, or doing family-oriented activities.

Because of the diminished role TV plays in the overseas kids' lives, most parents will say the grades and quality of overseas education is better than stateside.

The thousands of museums throughout Europe offer all an encyclopedia of ancient history that most people only read about. From the Viking ships in Oslo (including Thor Heyerdahl's Kon-Tiki and Ra II 21st Century vessels), to the Medieval Castles on the Rhine, to the ruins of the Coliseum in Rome, there is something interesting for all to see.

All in all, CEC officers and their families assigned to the overseas NATO commands/organizations enjoy their "once in a lifetime" experiences and tour of duty. It's frustrating at times due to language and custom barriers, various store closures due to regional habits and weather conditions, and seemingly slower pace of life and services. But, it is a beautiful and enjoyable place to live, work and play. It is also encouraging to see a seemingly cumbersome, multi-national and multi-language, NATO organization work, in spite of itself at times.

For CEC officers and their families, this memorable tour is another of the more exciting and enjoyable the Corps has to offer. The ability to communicate across sixteen different borders, in more than sixteen different languages, and the opportunity to share a common bond between America and its allies in this Alliance makes it one of the best of the best. □

an editorial

departments

By LCDR GERALD JUDE BARRETT, CEC, USN
P. E., Guam, Pa.
Defense Nuclear Agency

PUBLIC WORKS CAREER PERSPECTIVE

It is evident that emphasis at the highest levels exists as to the importance of service to the fleet, and our role in that capacity. However, what I write of is emphasis at a more fundamental level. With Public Works matters encompassing roughly 60% of the Civil Engineer Corps community's efforts, there must similarly be heavy emphasis on Public Works career paths.

We all enjoy design and construction work dealing with the architectural/engineering and construction contractor communities in a highly receptive, responsive, profit oriented environment. In many respects the opportunity to serve in this capacity is what keeps many of us in the service because of the immediate and future rewards.

Working in this environment, in challenging "constructive" roles represents fulfillment of ideals that many of us have set for ourselves when we started off on our naval career. The Public Works mold does not conform to these ideals. However, the "challenges" in Public Works are immense as compared to those in construction contracts or construction battalions when considering distinct areas of responsibility, and the resources available to solve them.

This is not to minimize one's role in contracts or Seabees and their associated responsibilities. I only point out the differences between our ideals, and the real world of Navy Facilities Management. This shifted emphasis is reinforced almost every time we meet with a senior officer to learn of the state of the Corps when principally construction and Seabee related efforts are emphasized.

Can you remember how often you've heard of some good news about anything in Public Works throughout your career? I'm sure you noticed who has run the OICC/ROICC/PWO conferences or more importantly, how the conference time was allocated. Thank God for contracting out to redirect attention.

We in the Corps must foster a deeper concern for commitment in Public Works, and surface more senior officers with front line experience in various positions across the broad spectrum of Public Works functions.

The time for Public Works diversification is not at the senior Commander or Captain level. Granted performance at this level is exceptional, but there must be a deeper understanding and long term commitment to Public Works matters, not only to change deep rooted perceptions, but to make Public Works the truly responsive organization it can be.

Maintaining expertise at peak levels in construction management is definitely a hard core objective. We must have officers properly trained to deploy with construction battalions and to organize and manage monumental construction programs, much as we did during Vietnam. However, the mundane day-in and day-out operations of running a Public Works Department are what is required for fleet preparedness.

The fleet must be ready *now*, and Public Works plays a significant role in insuring that readiness, from providing and maintaining housing and recreation facilities to support high morale and family stability, to providing ship cold iron services, transportation support or maintenance to deteriorating runways, or electrical distribution systems. This is an immense responsibility.

New construction is fine, but it too must someday be maintained. O&M funding levels and continuing responsibilities required to maintain the Navy's plant account is awesome in comparison to any present or anticipated future construction programs.

Public Works is not something that you must endure for one or two tours as you pass from Seabees to Contracts to the EFD or COMNAVFACENGCOMHQ. It is a challenge and an opportunity.

Let us recognize that, and develop and surface those that can effectively manage that effort. Let us cherish and seek Public Works and related fleet support tours as we have similarly cherished and sought after tours in Contracts, Seabees and NAVFAC entities.

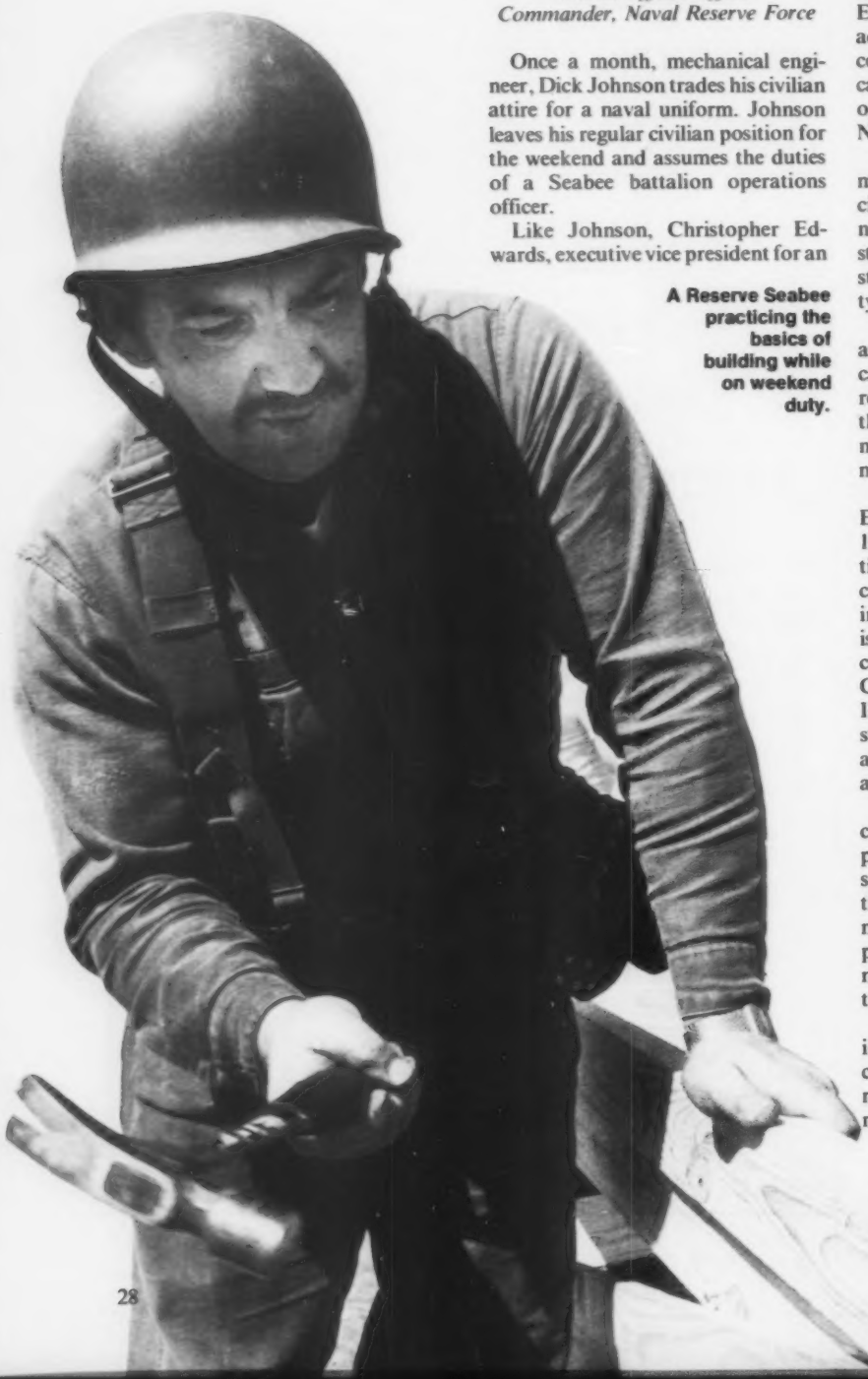
Reserve Seabees

How they think and what they do

By RUSS ANDERSON
Public Affairs Office
Commander, Naval Reserve Force

Once a month, mechanical engineer, Dick Johnson trades his civilian attire for a naval uniform. Johnson leaves his regular civilian position for the weekend and assumes the duties of a Seabee battalion operations officer.

Like Johnson, Christopher Edwards, executive vice president for an international construction firm, also undertakes weekend Seabee duties. Edwards' three and a half years as an active duty Civil Engineer Corps officer, in addition to 13 years of practical experience, qualify him as an operations officer for the 5th Reserve Naval Construction Regiment.



A Reserve Seabee practicing the basics of building while on weekend duty.

These two reserve officers, and many others like them, combine their civilian occupations with a part-time naval career to make the navy's construction reserve force 16,000 members strong. Their backgrounds provide a typical profile of the Seabee reservist.

Many reservists are veterans of active duty service now employed in career fields that closely parallel their reserve duties. They are leaders in their fields and have access to the newest ideas, the latest methods, the most modern equipment.

Reservists like Senior Chief Builder E.W. Rose, an original Seabee from 1943 to 1945, often note the correlation between their naval and civilian careers. Rose is a building inspector in Redwood City, Calif. As a reservist, he is assistant Bravo company commander for Reserve Naval Mobile Construction Battalion (RNMCB-2). In addition to experience as a construction superintendent, Rose holds a Navy enlisted classification code as a construction inspector.

Seabee reservists are architects and construction workers, engineers and project managers who share their specialized skills and knowledge with the Navy at least one weekend a month and for an extended two-week period each year. Seabee reservists make up almost 70 percent of the total Naval Construction Force.

Reserve Seabee units are structured in the same way as their regular Navy counterparts. A drilling (or selected) reserve flag officer commands the reserve units. He is RAdm. Thomas

S. Maddock who in civilian life heads an engineer and construction firm. RAdm. Maddock is commander, Reserve Naval Construction Force, Marine Corps Air Station, El Toro, Calif., and commander, 1st Naval Construction Brigade.

Training for the Seabee reservists is conducted by the 21st Naval Construction Regiment, also a reserve unit. Unlike other reserve activities in the Navy, training and administration of reservists is conducted almost entirely by selected reserves. Most other reserve units are primarily trained by active duty. The reservists plan for weekend drills and annual active duty volunteering many extra, unpaid hours for this purpose.

RAdm. Maddock also controls two other commands. Staff activities with serious mobilization assignments include Assistant Chief of Staff, Construction Maintenance, Commander in Chief, U.S. Naval Forces Europe (ACOS/CM CINCUSNAVEUR) and Reserve Division, Naval Facilities Engineering Command (RDNAVFAC).

If mobilized, ACOS/CM CINCUSNAVEUR would coordinate military construction in the southern region of the European theater of operation. Preparing for this possibility requires yearlong planning with forces in Europe.

The 250-plus reserve CEC officers assigned to RDNAVFAC have mobilization assignments with NAVFAC headquarters, and its field activities. In peacetime, RDNAVFAC provides cost-effective support to the Naval Reserve by providing Facility Support Officers (essentially "Public Works Officers") to Naval Reserve Centers throughout the United States.

The bulk of reserve Seabee activity, however, exists in the 1st Brigade. It consists of eight regiments, 17 battalions, two support units, two maintenance units and 19 fleet hospital units.

The battalions, under operational control of the regiments, are the constructing units. During weekend drills, battalions plan staff action, tackle community projects and work at various military bases throughout the world. When on annual active duty, the reservists travel the world usually working together with regular Seabee outfits.

Staff work aside, reserve Seabees are hardworking sailors. Except for occasional classroom work and military training, Seabee reservists keep their hands dirty and their shirts stained with sweat.

Weekend drills also include military training. Reserve Seabees fire the M-16 rifle and 60 mm mortar in training exercises every three years and occasionally hold three-day field exercises.

The reserve Seabees are proud of their work. They point with pride to years of construction experience and prior Seabee duty. However, many feel they fall behind their regular Navy namesakes in the field of military expertise.

Christopher Edwards, operations

A regular Navy Seabee (left) instructs Reserve Seabees in the maintenance and repair of a diesel engine.

39 graduate from basic at CECOS

Thirty-nine new officers joined the ranks of the U.S. Navy's Civil Engineer Corps on June 8, 1984, upon graduation from the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif., and have accepted assignments all over the world.

RAdm. Donald L. Conner, CEC, USN, Commander, Atlantic Division, Naval Facilities Engineering Command, was guest speaker at the graduation ceremony.

The class, No. 171, completed eight weeks of specialized training pertinent to the Navy's needs for shore installation engineering, public works management, and Seabee operations.

Six graduated with honors: Lt. Donel S. (Scott) Bianchi was the outstanding graduate. Five graduated with distinction: Ens. Robert G. Curia, Ens. Richard C. Gangloff, Lt. James R. Jackson, Lt. Larry F. Van Dessel, and Ens. James R. Van De Voorde.

Lt. Bianchi's photograph is indicated by (★). Those graduating with distinction are indicated by (•), and those entering Seabee duty are by (†).

★ **Lt. Donel S. (Scott) Bianchi**
PhD/U of Mo.
to Newport, R.I.

Ens. Dominic M. Albero
BSCE/VMI
to Charleston, S.C.

Lt. Thomas P. Allan
BSME/Texas A&M
to Gulfport, Miss.

Ens. Bruce D. Amidon
BSME/Cal St. Long Beach
to Guam

Continued on page 30

Ens. Joseph C. Avolio
BSCE/N. Carolina St.
to Key West, Fla.

Ens. Rafael A. Bossi
BSCE/U of Miami
to New London, Conn.

Ens. John R. Beshears
BSCE/UC, Irvine
to 29 Palms, Calif.

Lt. John R. Brown
BSME/Union College
to Oakland, Calif.

Lt. Michael R. Brozzo
BEE/Auburn University
to Jacksonville, Fla.

Ens. David M. Carroll
BSME/U of Mo-Rolla
to Norfolk, Va.

• **Ens. Robert G. Curie**
BSCE/MSCE/Cal St.
to Pearl Harbor, Hawaii

Ens. Joseph M. De Bella
BSCEE/UC, Irvine
to Warminster, Pa.

Ens. Lawrence J. Denicola
BSCHE/U of Pittsburgh
to Annapolis, Md.

Ltjg. Thomas E. Farmer
BSEE/VMI
to Washington, DC

• **Ens. Richard C. Gangloff**
BS/B ARCH/R.P.I.
to Naples, Italy

Ens. Richard N. Graham
BSCE/Mississippi State
to Gulfport, Miss.

Continued on next page

officer for the 5th Reserve Naval Construction Regiment, recently spent time on active duty in Gulfport, Miss. His regiment accompanied RNMCB - 2 and 18 to Gulfport.

Edwards is a commander in the Naval Reserve. He likes the comradarie and patriotism he finds in the reserves. Cdr. Edwards praises the skills of his fellow reservists, and says the reserves has a good group of middle managers.

Yet, Edwards complains there is not enough military duty. "We devote every third year of annual active duty to military training," he says. "That is not enough."

Master Chief Utilityman Robert B. Wilbur, owner of a steamboiler business, expresses similar thoughts about a need for more military training. "We reservists are able to pass onto the regular Navy Seabees the new methods and new materials in the construction field which we seem to get before they do," he says, "and it amounts to a trade-off because they are able to bring us up to speed in the military aspects which we need."

Reserve Seabees are well-liked in their civilian communities. They are always ready to lend a helping hand.

Builder Second Class Kenneth Hawthorne, operations petty officer with RNMCB - 2, spends many weekend drills overseeing these human relations projects. "Once we get proper clearance," he says, "we do all sorts of local work for the community."

Among other projects, Hawthorne and his fellow reservists have repaired a Girl Scout camp and built a bobby-sox baseball field, a pond at Moffett Field Naval Air Station and a building addition to a crippled children's service center.

However, reserve Seabees cannot compete with private enterprise on these community projects. LCdr. George Nichol, administration and public affairs for the 5th Regiment, says the reservists must get letters of non-objection from local workers' unions before starting a project.

"We are involved in both goodwill and self-help projects," Nichol says. Goodwill projects include work on Boy Scout camps, city parks, Salvation Army homes and historical buildings.

Self-help projects involve work performed for military units. "For a year, we spent weekends removing a railroad line from McClellan Air Force Base in Sacramento, and this year, we have sent 50-man detachments to work at Marine Air Station Kaneohe Bay, Hawaii, and naval air stations in Atlanta, Dallas and New Orleans.

Seabee reservists give military readiness top priority. They must be able to move out at a moment's notice. Some reservists were called to active duty in Vietnam and they all know it could happen again.

Battalion commander, Lynn M. Gorr, RNMCB - 18 says the reserve Seabee's are ready should the call come. "The knowledge that the reserve battalions really are ready for mobilization certainly adds to the satisfaction of being a part of it (the reserves)," says Gorr.

A reserve Seabee battalion must be ready to move within 96 hours after notice of mobilization. The battalion's air detachment has only 48 hours to mobilize. Regular readiness testing requires reservists to pack their gear, move it out, and bring it back.

Chief Warrant Officer David R. Thompson, RNMCB - 18, is responsible for equipment movement and world organization mobilization should the call arise. Employed by the Washington State Department of Transportation, Thompson says, "My civilian occupation with the state and my military responsibilities are closely related." He adds that the correlation between his two careers is mutually beneficial.

Seabee reservists are volunteers and can leave the service at their choosing. However, they stay for three primary reasons: patriotism, professionalism, and retirement benefits. Retirement pay does not start until age 60 but with it goes the same identification card and retirement benefits as regular Navy retirees. Many reservists remain in the system for 30 years earning additional retirement pay. Periods of active duty add to the retirement check.

Throughout the year, reservists can be found putting their expertise to work around the world. They will be in Spain, Alaska, Puerto Rico, Panama, Cuba, Hawaii and Guam. They will be keeping in touch with the Navy's way of doing things, and if needed, they will be ready to move out as active Navy Seabees. □

World War II memorabilia needed by Museum

The CEC/Seabee museum is preparing an exhibit to house general memorabilia depicting basically "The Home Front" during WWII. Needed are artifacts of this period such as; Gold Stars mother's banner, ration books, ration stamps, automobile ration stamp that was placed on the windshield, war savings stamps, front page of a major newspaper of the start and ending of WWII, posters of WWII musicals and plays, Life magazine issued the week after Pearl Harbor, American propaganda posters, liberty cards, chow passes, special on-base passes, unusual greeting cards, V-Mail, air raid wardens helmet and brassard, blackout hood used over the lights of automobiles, original "Lucky" Strike green package of cigarettes, draft cards, etc. If anyone has anything they would like to donate towards exhibit, please contact Hark Ketels at (805) 982-5163 or drop by the museum between the hours of 8 a.m. and 4 p.m. Mon.-Fri. at the museum.

One approach to management simplification

By M. C. KOBLOS
Command Programs Coordinator
NAVFAC HQ

Systems and procedures do not complicate management . . . people do. Consequently, if there exists a genuine interest within an organization to bring about management simplification, the least fertile ground to plow with long and detailed review and analyses are the systems and procedures, methods and operations, and routines and practices by which the enterprise is administered.

These are merely the smoke of inefficiency. To get at the fire, attention must be directed at the people involved in the management process. The more people involved, the more complicated the process will be.

Every process, from human development to the manufacture of a shoe, consists of a series of events, or steps, which must occur in pre-ordained succession in order to achieve the ultimate result.

Management is no different. Simplification, then, is most efficiently and effectively brought about by limiting the number of people who must involve themselves in each successive step of the management process.

The approach is the same, whether dealing with a corporate level process or the management of any subdivision thereof.

The first step is to clearly identify the successive events which make up the process, and second, to identify the number of people involved with bringing each event to fruition.

Third, and last, is to reduce that number. The extent of that reduction is dependent upon the extent to which simplification is desired; the greater the reduction, the greater the managment simplification that will evolve. It is as simple as that.

Lt. Gary W. Gunther
BSCE/U of Washington
to Washinton, DC

Ens. Shawn K. Hamilton
BSCHE/U of Mo.
to Glenview, Il.

Ens. James F. Hannigan
BSCE/U of Mass.
to Pensacola, Fla.

† **Ens. Joseph D. Hedges**
BSCC/UC of Chico
to Port Hueneme, Calif.

Ens. Gary L. Hodges
BSEPE/R.P.I.
to Cherry Point, N.C.

Lt. Gary W. Jackson
BSME/Ohio State
to San Diego, Calif.

• **Lt. James R. Jackson**
BSSE/U.S. Naval Academy
to San Diego, Calif.

Ens. Kimberly L. Krone
BSEE/Memphis St. Univ.
to Patuxent River, Md.

† **Ens. Darin V. Lasater**
BS ARCH ENG/U of Colo.
to Port Hueneme, Calif.

Ens. Rodney D. Massie
BSCE/VA Tech
to Norfolk, Va.

Ens. Cheryl M. McNabb
BSCHEM E/Texas Tech Univ.
to El Toro, Calif.

Continued on page 32

advice of counsel

departments

By ROBERT E. LITTLE, JR.
Associate Counsel, Procurement

The Federal Acquisition Regulation (FAR) became effective on April 1, 1984. One interesting feature of the FAR is that it requires agency (DoD and Navy) supplementing and implementing regulations in order to be useable. For that reason, the Department of Defense FAR Supplement (DoD FAR Supp) was also made effective on April 1.

Together the FAR and the DoD FAR Supp replace the Defense Acquisition Regulation (DAR) as the DoD-wide acquisition regulation. While substantively and procedurally there will be little difference in the way we do business, one change stands out — the appointment of contracting officers.

The FAR provides that contracting officers below the level of "head of contracting activity" shall be selected and appointed under a system established by the agency for their selection appointment and termination of appointment.

Since there are no subordinate "contracting activities" in NAVFAC, all contracting officers in NAVFAC, other than the head of the contracting activity, will be appointed through an appropriate selection process to be established by the Navy.

This system of appointments will be based upon individual skills of the candidate for appointment. Selection criteria included as examples in the FAR are:

(a) Experience in government contracting and administration commercial purchasing, or related fields
(b) Education or special training in business administration, law, accounting, engineering or related fields
(c) Knowledge of acquisition policies and procedures, including the FAR and other applicable regulations
(d) Specialized knowledge in the particular assigned field of contracting, and
(e) Satisfactory completion of acquisition training courses.

What does this mean for NAVFAC? It's too early to tell since the Navy has not established the system or criteria by which contracting officers will be selected. There are some possibilities to consider, however.

If NAVFAC continues to have its EFD commanders and OICCs act as contracting officers, they would also be required to meet contracting officer qualifications.

Can existing OICCs and EFD commanders be "grandfathered" as contracting officers? This has been answered by the Navy Acquisition Regulations Supplement (P-4202) 1.603-1.

Any appointment as a contracting officer in the Department of the Navy in effect on April 1, 1984 under the DAR and Navy Contracting Directive (NCD) shall remain in effect under the FAR until terminated in accordance with FAR 1.603-4 or a new appointment is made pursuant to FAR 1.603-3. The FAR does not automatically terminate any contracting officer appointment.

What about future appointments? The "crunch" will come this summer when EFD and OICC command changes occur. A mechanism albeit informal, should be in place by then to permit the appointment of contracting officers who meet the FARs experience training and educational requirements.

Ens. Marvin L. Miller, Jr.
AG ENG/U of Ga.
to Little Creek, Va.

† **Ltjg. David W. Moody**
BSCE/U of Texas
to Port Hueneme, Calif.

Ens. Victor C. Mosquera
BSCE/NJ Inst of Tech
to Panama Canal

Ens. Charles E. Nester
BSCE/Texas A&M
to Washington, DC

Ens. Donald P. Reis
BSOE/USNA
to Jacksonville, Fla.

Ens. Kenneth C. Stagg
BSCE/San Jose St. Univ.
to Oakland, Calif.

• **Lt. Larry F. Van Dessel**
BSCE/Penn State
to Brunswick, Me.

† **Ens. J. R. Van De Voorde**
• BSCE/Loyola Marymount
to Port Hueneme, Calif.

Lt. Dennis W. Wilborn
BSASE/U of Texas
to Barstow, Calif.

Ens. Wade B. Wilhelm
BSME/U of Texas
to Mare Island, Calif.

Ens. Steven M. Wirsching
BS Aerospace/USNA
to China Lake, Calif.

Ens. Stephen W. Wise
BSCE/Tri-State Univ.
to New London, Conn.

In addition to the opportunities for challenging and rewarding careers in the active duty Navy Civil Engineer Corps, there are similar career opportunities in the Reserve Civil Engineer Corps.

CONSIDER THE RESERVES

If you are a young construction professional in civilian practice or civil service, or are a graduating engineering or architecture college senior who has already selected a civilian career path, the Reserve CEC may have a place for you as a commissioned officer.

Qualified young professionals have the chance to achieve tremendous personal and professional satisfaction through . . .

- Direct appointment as an ensign, Civil Engineer Corps, United States Naval Reserve
- Challenging assignments within Reserve Naval Construction Force units in your geographic locale, in areas paralleling active CEC duty in the Seabees or in facilities management
- Annual active duty for training that is meaningful and rewarding
- Development of leadership and technical skills that will carry over directly into your civilian profession
- New and lasting friendships and associations with other top-notch construction professionals
- Pay and responsibility that increases as you grow and advance
- A Naval Reserve retirement package for a little something extra in your old age
- Finally, and most importantly, the pride in knowing that you are helping preserve the freedom of your country as you grow in your profession

Here's what you can do . . .

If you are a young engineer or achitect, male or female, please call the Reserve Representative listed below.

LCdr. Howard M. Lewis
Eastern Region, RNCF
Bldg. 662, Naval Base
Philadelphia, PA 19112
Phone: (215) 897-5831/34
AV 443-5831/34

LCdr. Howard H. Huggins
Southern Region, RNCF
Naval Base
Charleston, SC 29408
Phone: (803) 743-2650/4322
AV 794-2650/4322

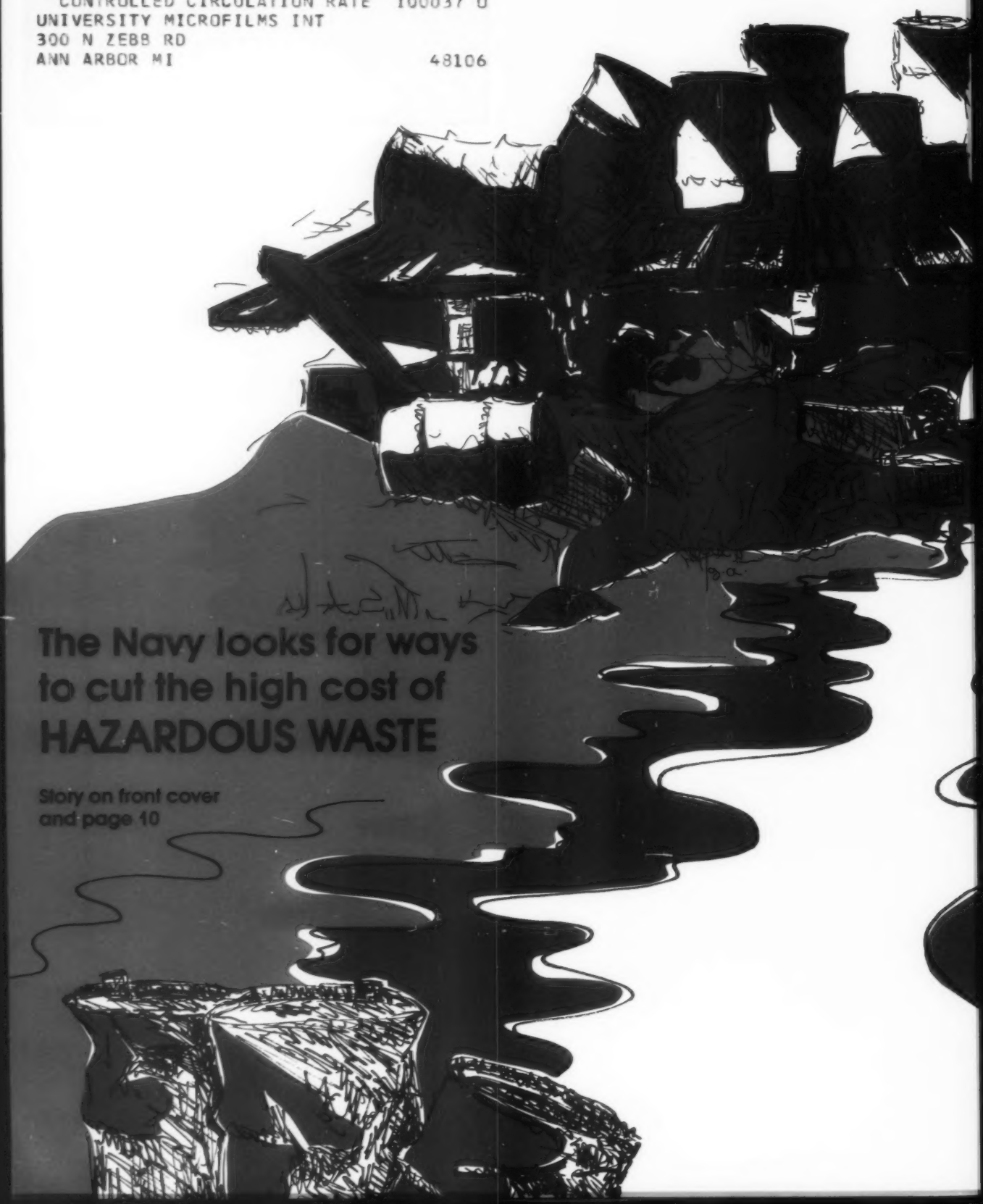
Lt. Robert D. McClure
Central Region, RNCF
Bldg. 1, Naval Base
Great Lakes, IL 60088
Phone: (312) 688-6955/6
AV 792-6955/6

LCdr. John A. Fessler
Western Region, RNCF
1220 Pacific Highway, Suite 203
San Diego, CA 92132
Phone: (619) 696-5401
AV 958-5401

Or, contact an Active Duty EFD Accessions Officer listed on the inside front cover for further information and details . . .

Call now (collect)

NAVY CIVIL ENGR MAGAZINE (USPS 560-950)
CONTROLLED CIRCULATION RATE I00037 0
UNIVERSITY MICROFILMS INT
300 N ZEBB RD
ANN ARBOR MI 48106



The Navy looks for ways to cut the high cost of HAZARDOUS WASTE

Story on front cover
and page 10